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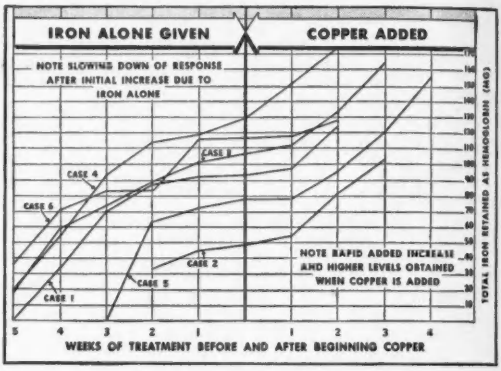
COPPER *with* IRON

It Pitches the Hemoglobin Higher

Hutchison Study Shows Increased Conversion of Iron into Hemoglobin when Copper is Given...


IRON ALONE GIVEN
COPPER ADDED
NOTE SLOWING DOWN OF RESPONSE AFTER INITIAL INCREASE DUE TO IRON ALONE
CASE 4
CASE 3
CASE 6
CASE 2
CASE 5
CASE 1
NOTE RAPID ADDED INCREASE AND HIGHER LEVELS OBTAINED WHEN COPPER IS ADDED
TOTAL IRON RETAINED AS HEMOGLOBIN (MG)
5 4 3 2 1 1 2 3 4
WEEKS OF TREATMENT BEFORE AND AFTER BEGINNING COPPER

Graphic record of six typical cases from the Hutchison Study. Note first the iron retained as hemoglobin when iron alone was given. Then notice the additional rise when forty milligrams of copper per week was given. Hutchison's work confirms the findings of many other scientists—that copper given with iron achieves maximum hemoglobin rise in nutritional anemias. Iron retention levels shown above are cumulative.

A SIGNIFICANT phase of the studies by Dr. James Hutchison of the University of Glasgow, is the greater speed with which iron is converted into hemoglobin, and the *higher* hemoglobin level attained, following the administration of small amounts of copper.

Says Dr. Hutchison, "The ability of copper alone to produce a high final hemoglobin level in some instances has been a notable feature in this series of cases.... The administration of iron produced a large iron-storage in the body. Of this store, only a small amount went to hemoglobin formation, the remainder being apparently unavailable as the hemoglobin level ceased to rise appreciably until the administration of copper caused some of the stored iron to be liberated into the blood-stream for transportation to, and utilization by, the hematopoietic centers in the bone marrow."

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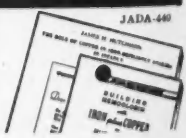

JOURNAL OF THE
AMERICAN DIETETIC ASSOCIATION

VOLUME 16 April, 1940 NUMBER 4

INSTITUTION MANAGEMENT AND PROFESSIONAL SUCCESS[1]

QUINDARA OLIVER DODGE

Simmons College, and Vocational Training Department, Women's Educational and Industrial Union, Boston

YOUR program chairman, Rosa Spearman, has asked me to consider the subject "Merging Theory and Practice in Institution Management Problems". As she outlined it in earlier correspondence the topic boils itself down into the question: how can training be strengthened to avoid the shortcomings of the trained but inexperienced worker in the institution management field? We all must occasionally admit that our graduates have shortcomings. In fact, we all constantly strive to strengthen our training in an endeavor to reduce these shortcomings to a minimum. Despite our efforts, employers continue to insist on two or three years of experience. Why? So that someone else will first have taken the losses that frequently result from the decisions of the inexperienced worker.

Our plans of instruction in institution management are consciously or unconsciously influenced by the demands of the job as set up by the employer without regard for the interests of either the instructors or the students. Therefore it is essential that any statement regarding the degree to which college graduates are adequately equipped to take their first jobs immediately out of college must be judged by the employer's yardstick for measuring their success. Interpreted through his eyes, the picture of the strength and weaknesses of the young home economics graduate becomes exceedingly significant for us. Our personal convictions must be tempered by his beliefs if we are to train our students successfully.

An honest, impersonal presentation of the above problem involves a high element of risk that I may be misunderstood, but the gains that should come to our graduates and to their employers as a result of a frank consideration of this question by us today appear to me to make it well worth while.

STRENGTH AND WEAKNESSES OF YOUNG INSTITUTION MANAGEMENT GRADUATES

Recently it was my good fortune to attend a convocation commemorating

[1] Read before the Institution Administration Section, American Home Economics Association, San Antonio, Texas, June 22, 1939.

the twenty-fifth anniversary of the founding of the course in Business and Engineering Administration at the Massachusetts Institute of Technology. Twenty-five years ago the members of a special committee, appointed to survey the strength and weaknesses of young technology graduates, were selected from heads of industry who knew both qualities from having employed the graduates. The course in Business and Engineering Administration was established as a result of the recommendations of this committee.

It was cheering to learn that the strengths and weaknesses of the young technology graduates twenty-five years ago were very similar to many of the characteristics existing in our institution management graduates today. Our own solution of the problem can come from two fronts: within the college, in strengthening undergraduate training; and without the college, in encouraging, *requiring* our graduates with most promising administrative ability to take a fifth year of training in approved administrative courses.

Careful study shows that some of the weaknesses of the graduates are inherent in the graduate herself and must be accepted as such. Other weaknesses should lend themselves to control in either undergraduate or postgraduate administrative training. The weaknesses of which employers most frequently complain are:

1. Lack of adequate preparation in institution management subjects.
2. Lack of the basic fundamentals of scientific food preparation.
3. Lack of a realistic concept of "Orders".
4. Lack of awareness of the place "Costs" play in their work.
5. Lack of adequate preparation in English.
6. Lack of skill in demonstrating their assets.
7. Lack of self-confidence and social poise.
8. Lack of self-discipline, fundamental character traits and a becoming self-humility desirable in the successful administrator.

Despite the strength in skills, knowledge and personal assets that many graduates bring to their first jobs, these advantages are often so offset by the possession of one or more of the above weaknesses that the employer frequently finds them unfitted for the responsibilities required.

UNDERGRADUATE ADMINISTRATIVE TRAINING

The first five liabilities: lack of accurate management and foods knowledge, ability to follow orders, an instinctive sense of "costs", and an adequate vocabulary and skill in written and spoken English, can be noticeably decreased in undergraduate college training. The last three weaknesses: lack of skill in demonstrating their assets, developing self-confidence and self-discipline, can be effectively decreased by training in college but the students need a fifth year of training and wise guidance to perfect these qualities.

Adequate Preparation in Institution Managements Subject. In administrative positions the application of the modern concept of scientific management to their jobs is the tool that enables our graduates effectively to put into use the two

other equally essential tools of their profession, foods and nutrition. Yet in too many instances the students go out inadequately prepared in institution management subject matter.

The number of semester hours and subjects available in some instances needs to be increased. Many colleges provide only six or eight semester hours of institution management; the minimum required by the American Dietetic Association for admission to graduate training courses is nine credit hours. The Committee on Outline of Objectives and Content of Administrative Student Dietitian Training Courses, Katharine W. Harris, chairman, recommended in its report at the 1938 meeting of the American Dietetic Association that "twelve hours is a desirable minimum in the institution management area".

All subjects essential to thorough institution management preparation, namely, Organization and Management, Institution Buying, Quantity Cookery, Personnel Management and even Institution Accounting, can be most effectively taught by instructors who have first proved their ability successfully to hold demanding administrative jobs. Theory and practice should dovetail like an intricate jig-saw puzzle and be interpreted for the students in the class room in a realistic, usable way by an instructor who has at some time headed up a large, complex food or food and house department of her own. Competitive food experience is a valuable asset to an instructor since the strain of meeting competition in the restaurant industry is a severe test of executive capacity and effectively emphasizes the significance of the dollar sign in success. Instructors lacking administrative food experience can often obtain a valuable background by means of summer work at resort restaurants or hotels.

Instructors in these subjects should also have had thorough grounding in the modern concept of scientific management principles as applied in industry today. A comparison of the thoroughness of the preparation of our graduates in this respect with the preparation available to the graduates of the pioneer courses in these subjects for men, such as the Graduate School of Business at Harvard University, or the aforementioned course at Massachusetts Institute of Technology, reveals points at which the approach in schools of home economics could profitably be strengthened.

The noticeable evidence of a trend in educational thinking, that inspiration and dissemination of knowledge must go hand in hand for effective teaching, is encouraging. Students need to be so inspired that they will *want* to learn the fundamental facts so thoroughly as to be able to retain them as permanent tools, rather than merely "cramming" these facts in preparation for an examination.

Basic Scientific Food Preparation. We all appreciate that colleges are not in a position nor should they be expected to provide sufficient quantity food preparation experience to develop all the essential technics, but at least the students can be taught to anticipate and prevent poor products and even learn to determine from the finished product what caused the poor result. In my earlier positions as a hospital dietitian serving one thousand patients, employees and staff daily, careful recipes, selection and training of employees and follow-up control resulted in quality food products

more often than not. My previous college training, therefore, seemed adequate at this stage in my experience. However, you can picture my chagrin and consternation when later, as one of the executive staff in the complex and large organization of one of the oldest restaurants in Boston feeding some 20,000 persons daily, I found that this approach and degree of foods knowledge was totally inadequate. In the competitive set-up, college graduates trained in scientific food preparation were expected to be able to put their finger on the point of difficulty at any stage in the production or service of a dish for a customer. Further, the ability to offer a remedy that would make the product salable and of perfect quality or to know whether it was beyond redemption and should be thrown away, was expected as a matter of course. To assure these results there must not only be adequate experience in quantity food production and the use of heavy duty equipment, but the instruction in quantity food production should be based upon organized and comprehensive undergraduate courses in the fundamentals of scientific food preparation.

In our Administrative Student Dietitian Course at the Women's Educational and Industrial Union, as we have followed the progress and development of the superior college graduates granted competitive appointments, we have increasing evidence of the lack of *grounding* in scientific fundamentals of quantity food preparation in many of these graduates. The correcting of this condition is the responsibility of the colleges teaching these students quantity food production. In 1935 Bessie Brooks West made a survey of physical facilities available and course content of quantity cookery courses in 78 colleges. She reported the results of the survey at the 1935 meeting of the American Dietetic Association. Her descriptions of the discrepancies between the content of the courses and the subject as actually taught in many of these colleges is still very vivid in my mind.

In order to appreciate the following illustration of evidence of this lack in graduates, you should know that each administrative student dietitian at the Union, when scheduled to the "Special Parties or Inside Catering" assignment, is also responsible for the planning, preparation and service of the teas for our weekly Friday afternoon departmental conferences. We once thought that poor products produced by some students for these teas were caused by lack of foods skill; now we are coming to believe that it is not so often a lack of manual dexterity as it is inadequate knowledge of the scientific and *fundamental* principles of food preparation.

Recently a student on this assignment was made responsible for developing a new gingerbread recipe, made with bits of candied ginger, to use for sandwiches for special teas. After much experimentation a delicious product was secured. It is our rule whenever a recipe for a new product is to be developed, that the recipe cannot go into the permanent files until it has been successfully used by at least two other students. The second student to try the recipe was unable to secure the same quality of product until her method was observed and her technical errors in combining ingredients corrected. She had been trying too hard and also lacked the fundamental scientific knowledge to

interpret the recipe correctly. Instructions called for mixing thoroughly but each time she had *overmixed;* furthermore, when she saw the faulty finished product she was unable to list the reasons *why* a poor texture had resulted.

Concept of "Orders." Institution management graduates must be initiated into their responsibility to "Orders" in college. They should not be permitted to discover for the first time on their job, how essential strict but intelligent observance of "Orders" is to their success. They must learn that intelligent orders are the first fundamental of executive control. As future employers they have a definite responsibility to make their own orders as clear-cut, explicit and easily understood as is humanly possible. But first they must learn how to take orders and secure the result *expected* by their employer—not the result that they "think" may be wanted. Again and again employers say, "I don't pay them to think, I pay them to get the results I want". In this explosive statement the employer undoubtedly uses the word "think" with the connotation "to exercise the faculty of inference". His concern in the matter is due to the fact that he, himself, must eventually bear the loss resulting from the inaccuracies or mistakes of his employees.

Why are college graduates so often weak in their execution of orders? I purposely use the word "orders" in preference to the word "instructions", for the former connotes a more inflexible responsibility on the part of the employee to get results. Many times the employees do not listen when orders are given. No one can follow orders intelligently unless she first listens carefully, weighing the significance of each word, testing the relationship of one word to another as to its possible effect on her execution of the order, and visualizing each step she must take to get the result requested. When she fails to take an order as outlined above she cannot anticipate her difficulties until they are upon her. Words have more than one meaning, varying degrees of experience may make possible more than one result from an identical order. The time to ask questions is when the order is given. An independent decision on a debatable point that has not first been checked with one's superior is usually inexcusable. In the following of orders, students tend to discount the vital importance of small details, they "guess" instead of getting the facts necessary to reach a decision. "Knowing" the facts is quite different from "thinking one knows".

Recently a college graduate secured in a famous restaurant an interesting position entailing an unusual degree of administrative responsibility and promising a real future. She was introduced to her position with this order: "For the first week we expect you to do nothing but keep the correct prices on the cakes and baked goods in the display cases, to keep your eyes and ears open and if a customer asks any questions be sure to call a regular sales person. Under no condition are you to answer questions or wait upon customers yourself." One would expect that an order as simple and clear-cut in content as this could be carried out accurately and dependably. The correct prices were *not* kept on the items in the display cases, and customer questions *were* answered and their wants waited upon.

In two weeks this graduate had lost a job, and worse, spoiled the chance for other graduates to be given a similar job even after one year of postgraduate training. Inexcusable? Yes, but so many fail to follow seemingly insignificant orders to the letter of the law, forgetting that until they can be proved reliable in little things they cannot be entrusted with larger responsibilities.

Another employer tells of instructions given to a shipping clerk which included counting and filing alphabetically all blanks filled out by those who had visited the firm's booth at conventions. For several months he followed instructions; then seeing no use made of the material, he decided to throw the blanks away. Two months after his independent decision, the head of the advertising department called his department head in and asked for data that could be secured only from these blanks, as a check upon the value of the advertising appropriation for exhibits at conventions!

College graduates frequently show similar lack of judgment and are equally as presumptuous as this shipping clerk in taking authority unto themselves. Graduates also err in not knowing when to keep their employer informed of mistakes in judgment or performance.

Professional subjects in college, certainly all subjects in the institution management field, could profitably be taught with a simulated employer-employee relationship existing between the instructor and her students. Assignments under this relationship could be termed "Orders", and failure to carry them out accurately and on time should immediately be penalized—consistently and with understanding and firmness. Students should be taught to look upon the fascinating doors opened for them one by one into the wonders of the administrative world as the keys to their first success, so that they will voluntarily apply themselves to the requirements of the course. Assignments should be difficult enough to test their ability to plan and carry out an intelligent time schedule of work, play and sleep, and to work under pressure without "going all to pieces."

Awareness of the Importance of "Costs". A thorough foundation in the fundamentals of bookkeeping and accounting, particularly as applied to food cost control problems applicable to large or small scale food production and service, is necessary. A thorough preparation in this subject paves the way for teaching one's self to see the significance of data and facts learned from day to day on the job. It is essential to develop almost a sixth sense about costs. This skill and thinking must reach the routine point where no decision is ever made without weighing its possible effect on income and expense. Or as Jaspar Whiting, chairman of the original special committee at Massachusetts Institute of Technology said at the aforementioned convocation: "It is necessary to develop the proper conception in the students of the place costs play in their work to the point where it could result in a thesis titled, 'The Position of the Dollar Sign in the Chemical Reaction'".

Technic in Demonstrating Assets. Students looking forward to administrative positions should be required to take more English courses designed to increase the extent of their general and professional vocabulary and teach greater proficiency in self-expression, for

without this knowledge they fail to put their best foot forward in presenting work to their superiors.

A thorough grounding in English should be a requirement so that they will know how to speak in a well modulated, pleasing voice as easily and convincingly when standing on their feet as when seated, and with a posture and professional appearance that command respect.

Equally important would be a course planned to teach them how to collect, organize and present factual evidence in a report in such a way as to permit them to sell new ideas and plans to their superiors and to prepare annual reports that successfully bring out significant achievement secured during the year. Too often administrative dietitians, school cafeteria managers, in fact most home economics graduates are inadequately prepared in English.

Self-Discipline, Character and Self-Humility. The last and fundamental weaknesses, absence of self-discipline, character and self-humility, are grouped together because with very few exceptions, I believe, much of the philosophy behind modern professional college education is at the root of their continued existence. Theory and practice, and by practice I mean existing conditions found in the everyday workaday world, have not always been successfully merged in college teaching. Graduates are frequently unequipped to make the transition from the artificial relationships and standards under which they have lived in college to the realistic, matter-of-fact world of hard knocks and to the "deliver the goods or else" attitude toward responsibility prevalent in the business world.

Miss McAfee, youthful president of Wellesley College, has characterized the college as the incubator existence of our American youth that often ill fits them for life outside the college doors.

How many professional courses are taught in college in such a way as to help the student continue to develop any self-discipline begun at home or ably promoted in high school? Students are sheltered, protected, allowance made for their shortcomings, and in innumerable ways the formation of bad work habits is unintentionally encouraged. "Apple-polishing" too often takes the place of acceptable performance of an assignment.

How many college courses are set up to provide an unbiased and accurate picture of the character traits: personal integrity, honesty, tenacity, good sportsmanship, personal and professional courage and loyalty, which each student possesses?

Instruction in institution management subject matter should be planned in such a way as to get a true, unbiased written record of the stages of progressive development of the individual student. It should also be planned to provide evidence of the possession or lack of those traits of character essential to leadership.

Students may possess self-discipline, the essential character qualities and all the other assets needed for leadership, but if they lack self-humility they will not be so successful as they would like to be. Self-humility is desirable in the instructor as well as in our graduates. Self-humility assures the graduate a humbleness toward knowledge and one's personal abilities and makes it more probable that the significance of scientific research, new facts, new products, new trends of a professional nature will not

be overlooked. It makes the instructor open-minded to the hopes and aspirations of young students and to the latent value of their ideas and plans, immature though they may often be. Self-humility does not mean the lack of self-confidence, rather is its presence an evidence of the presence of the highest type of self-confidence. Self-confidence is based upon knowledge, common-sense, tact and wise initiative. The young college graduate is eager for praise, eager for opportunities to demonstrate her knowledge, and this eagerness when self-humility is lacking may often prove her undoing.

A good example of the lack of this quality recently came to my attention. The occasion was a formal dinner for an influential group of college officials and their wives. Wishing the coffee to be perfect the director had ordered a special blend and grind. The evening came and the coffee could not be used with the equipment available because of the grind, so the assistant herself made the coffee with the best brand they had on hand, ground suitable for the equipment. The next day the president's wife was complimenting the director in the presence of this assistant on the excellence of the dinner, the perfection of detail and the superb quality of the coffee. The director spoke of the precautions she had taken to have it so and the special blend of coffee she had ordered, only to have the assistant speak up unasked and say "But we didn't use that special coffee—we used so and so". You can readily picture the sense of humiliation felt by the director. Such episodes put the finger on one of the reasons why a graduate today may be exactly where she was several years ago when she first began her career.

Administrative responsibility entails leadership. Therefore our education must be for leadership. Lammot du Pont recently asked a Boston audience "What is Leadership?" and went on to say it depends on how you define leadership. "Some consider Einstein a great leader; others, that Hitler is a great leader." Which kind of a leader are we talking about when we envisage our graduates going out to take responsibility? Responsibility is a burden that someone must carry. Will our graduates have the stamina and the character necessary to carry this burden? There is increasing evidence that a certain type of teaching approach will bring out latent character. Students taught with this approach will come to feel that strenuous mental effort is good, that standards are worth measuring up to and that character is commendable. All of these are desirable attributes which we hope our graduates will carry over into their jobs.

POSTGRADUATE ADMINISTRATIVE TRAINING

Colleges are not in a position to give consecutive experience in real situations in "going" concerns to permit the students to get the actual sense of responsibility. Nor can colleges provide in a four-year program sufficient practice in quantity food preparation to develop skills and self-confidence and still meet the requirements for the academic degree. The opportunity to put the theories of personnel management into practice is also not available in most colleges. Nor is practice and experience in food buying and menu planning related to cost control available in sufficient amount to

give college students much needed confidence in the practicality of their theoretical knowledge.

Facing this inventory of their assets and liabilities, is it wise to encourage our graduates to take administrative jobs immediately out of college? Isn't the fifth year of postgraduate administrative training the intelligent answer for all except, perhaps, those fortunate few who secure positions in an organization where adequate supervision and help are provided by a wise director, such as in school lunchroom systems?

Some colleges are leading the way to a wise solution from the students' as well as the employers' standpoint. Others see the need but find the solution impractical under existing conditions. Students in Kansas State College are told as freshmen that if they are looking forward to an institution management major they are expected to be prepared to take a fifth year of postgraduate training before they can be recommended for a job. The University of Washington withholds the bachelor degree until students with this major have satisfactorily completed a fifth year of training. The more promising a student may be in administrative ability, the more she will profit from this fifth year spent in personal growth, the acquiring of additional knowledge, professional skills, and well formulated work habits. The fifth year further provides a perfect set-up for the graduate to secure a broad understanding of human nature and human behavior, and to test her ability to work with employees of all types, with her professional equals and with her superiors.

The need for the fifth year of training and experience in American Dietetic Association Approved Administrative Student Dietitian Courses cannot be too fully stressed as fundamental to future professional success in any job that requires administrative leadership.

Combined Dietary and Housekeeping Management in the Small Hospital.

THE QUESTION is often asked, "Can a small hospital of 35 to 75 beds afford a dietitian?" A hospital cannot afford to be without the trained services of a dietitian in all fairness to the patients, doctors and hospital. Possibly a dietitian in a small hospital is not occupied with dietetics alone; therefore, in the interests of economy and efficiency, we would suggest her doing housekeeping duties as well. The dietitian receives special training in housekeeping when obtaining her degree and is therefore the logical person to take on this department under the superintendent.—*Clark, V., and Lipsit, F.: Dietary and Housekeeping Management in the Small Hospital, Hospitals, December, 1939.*

THE SOCIAL WORKER LOOKS AT THE NUTRITION PROGRAM[1]

ARLIEN JOHNSON

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IN THE past decade tremendous social forces have been at work, revolutionizing traditional methods and concepts in many professions. The national crisis of an industrial depression in which unemployment has been increased fivefold and a fifth of the families of the nation, at one time, have been dependent upon public relief for subsistence, has resulted in social legislation that has greatly expanded the function and scope of public social services. More than ever before as a nation we have become concerned with the ideal of "security for the men, women, and children of the nation." In addition to the federally aided program of public assistance for the aged, blind, and children, we are witnessing educational and promotional service programs for public health and child welfare in which the federal government is participating to a degree hitherto unprecedented. But national policy has gone beyond alleviation of need. The legislation of the past decade has included programs of old age and unemployment insurance, and social and economic planning to the end that a higher level of national well-being might be reached. Even the national health program which a few years ago was the dream of a few, now looms inevitably nearer.

So it has ever been that out of a concern for the pathological comes an interest in prevention, and out of disaster comes reconstruction. The same expanding pattern appears when we turn to your field of nutrition. Not so many years ago governments were interested in diets only in periods of crisis such as war when it became necessary to feed soldiers and civilians on the minimum essentials in order to conserve the food supply. Today we have a report (1) on nutrition made by distinguished representatives of fourteen countries for the League of Nations in which appears this statement: "The standard for adequate nutrition, like the standard for hygiene in general, cannot be limited to that required for the prevention of avoidable diseases by means of a minimum or barely adequate diet; the business of adequate nutrition is to create health by means of the optimum diet."

Modern science and the activity of research in fields relating to nutrition have brought the nutritionist out of the diet kitchens of hospitals and away from menu planning for institutions; we find her now also in the broadening field of health education where she serves as a staff member in public health, education, and welfare systems. Her specialized knowledge is now being integrated into these fields, demonstrating that adequate diet prevents sickness, influences growth of children markedly, and even affects nervous stability and personality. Thus from emphasis on minimum diets for barely adequate health, the aim of nutrition has expanded to "nothing less than

[1] Read before the General Session, American Dietetic Association, Los Angeles, August 31, 1939.

optimal nutrition as a foundation for optimal health", as Lucy Gillette has phrased it.

THE NUTRITION PROGRAM IN SOCIAL WORK

The exigencies that arise so constantly in administering assistance to people during a prolonged depression are not conducive to keeping before the social worker these larger aims of the nutrition program. The social worker, like the nutritionist, believes in the application of scientific knowledge to the everyday lives of people to the end that the fullest possible development of personality be realized. But state legislatures fail to appropriate sufficient funds for relief; a "recession" occurs; Congress reduces the federal works program lest people on relief think of WPA as a career, and so more people than anticipated become dependent upon the already inadequate state and local relief funds and another "crisis" is precipitated in state after state. In the realities of such difficulties the social worker who has to face families day after day, trying to interpret a meager budget, too often has to think in terms of minimum subsistence. It is at this point that the counsel and materials that the nutritionist can provide are indispensable if we are to maintain people on relief on even minimum diets.

The extent to which the services of the nutritionist are available is all too limited in spite of the encouragement given to this service by the Federal Emergency Relief Administration in 1934–1935 when an adviser on food requirements was added to its staff and state relief administrations were urged to follow suit. In 1935 a questionnaire sent to member associations of the Family Welfare Association of America revealed that 63 home economists were employed by 32 of the 160 private family welfare agencies which replied. In addition it was estimated there were at least 200 home economists employed in public welfare and health departments throughout the country. In many localities welfare departments work closely with some of the 2300 women trained in home economics who are employed in the Cooperative Extension Service of the United States Department of Agriculture. Not to be omitted as sources of borrowed services are the state college and state university departments of home economics which often give generously of their time and knowledge.

Various bureaus and offices of the federal government have recognized the place of the nutritionist for consultation service. The housekeeping aid projects under the WPA have often been under the supervision of home economists; and the Farm Security Administration has employed home economists to the exclusion of social workers in the rural relief and rehabilitation program. If we exclude the two wholly federal programs, the WPA and the Farm Security Administration, however, it is evident there are only a few hundred nutrition specialists employed by state and local welfare agencies which are administering assistance to millions of dependent people.

Let us examine for a moment the elements in the relief situation which would seem to make the services of the nutritionist indispensable. In terms of the future health of the nation, the number of children in families on relief presents a serious situation. Various studies have shown that a greater proportion of children under 16 are found in families

on relief than for that age group in the general population, so it is possible that about 3 million of the 8½ million persons on home relief in the United States in May 1939, were children under 16. According to a recent report (2) of the California State Relief Administration, this preponderance of children on relief prevails in this state. Whereas only 32 per cent of the general population in California is under 19 years of age, the proportion was 65 per cent among the employable, unemployed families under care of the State Relief Administration, or twice as large a proportion on relief as for the age group under 19 in the general population. The amount of relief available averaged $24.60 per family in the United States in May 1939 and was $31.32 for the Aid to Dependent Children families. Out of these amounts must come shelter, fuel and other necessities in addition to food. Yet the study made in 1936 by the Bureau of Home Economics of the U. S. Department of Agriculture of 3500 dietary records of employed city workers indicated that few families spending less than $1.50 per capita a week for food obtained "adequate diets for average health". While it is true that adequate income does not necessarily ensure adequate food, the chances for teaching proper food habits are much greater if there are resources with which to work. It is obvious that relief continued at this rate over a period of time, as is necessary in the Aid to Dependent Children program, for example, will not permit proper nutrition for growing children. School lunches planned by nutritionists take on added importance in the light of the relief situation, if the children of this generation are to have a chance to escape diet deficiency diseases and damage to future health.

It is perhaps laboring the point before an audience of this kind, to mention other elements in the relief situation which endanger proper nutrition for a large part of the population. We know too well that people on relief are ill twice as many days a year as those employed; that adequate food protects against illness; that the unemployed or partially employed living in poverty if not dependency, are trapped in the vicious circle of poverty and sickness and then unemployability. When we consider that for ten years one-seventh to one-third of the wage-earners have been unemployed, and that the present estimate is about 12,000,000 unemployed, it is evident that the physical and mental health of a large part of the population is endangered.

If we know these facts, a logical question is: "Why do public welfare agencies not employ more dietitians for the protection of the health of people on relief?" A number of reasons might be suggested. First, that developments in the science of nutrition have been so rapid in recent years that the general public is not yet fully aware of the significance of the findings. Too often the nutritionist in the public welfare department is regarded by the general public and hence by legislators as one of the "frills" which increase overhead cost of public welfare administration. It is perhaps easier to demonstrate the positive effects of nutrition upon health through associating the nutritionist with the public health department than it is to have her services for persons on relief. There is still a good deal of fear in some quarters that those receiving public assistance will fare

too well. But if the value and importance of nutrition for the population as a whole can be demonstrated by public health departments, if technical knowledge can be made understandable as in Dr. Rowntree's recent pamphlet (3), if the education of social workers, public health nurses, and nutritionists can be related in their respective professional training periods, then we may expect to multiply the number of nutritionists employed by welfare agencies from a few hundred to several thousand.

A second reason I might suggest that has stood in the way of nutritionists being employed in social agencies is that there are not enough people available who have had scientific training in nutrition and special preparation or experience in adapting their knowledge to actual situations. Your Association has had committees at work, I am aware, on the academic training and minimum qualifications necessary for such positions. May I therefore add a few remarks on some of the special problems in social work of which the nutritionist should take account in planning a course of study.

PROBLEMS IN THE RELATIONSHIP OF NUTRITIONIST AND SOCIAL WORKER

Real progress has been made in the utilization by social workers of the knowledge made available by home economists. One of the first principles in the administration of assistance is that the family shall receive assistance in accordance with budgetary needs. The pioneer work of Lucy Gillette and Florence Nesbitt, to mention only two home economists well known to social workers, has left no doubt of the scientific basis for family budgeting and of the need of continuous counsel from home economists. Too often, however, the social worker thinks of the home economist only in terms of budget-making. The service most in demand would include budgeting, homemaking generally, and nutrition. So in planning your course of study for home economists in welfare agencies I hope you will avoid too narrow specialization, and will prepare the nutritionist to give a rather broad service.

A second comment I would make is that the nutritionist be prepared to teach or to serve as a consultant to a rather miscellaneous group of social workers. Individual family service becomes so expensive that it is scarcely possible within present-day administrative funds and case loads to make it available. When I tell you that only about one-sixth of the men and women filling social work positions in the United States have had the educational preparation and experience to qualify them for membership in the American Association of Social Workers, you will understand what I mean by being prepared to teach a "miscellaneous" group. A census (4) of social workers in California made in 1938 showed that slightly more than one-fourth of those in social work positions had had graduate study in social service. Let me hasten to confess, however, that even the social worker with professional graduate education does not always know as much as she should about the elementary principles of nutrition. While courses giving such information are quite generally recommended by schools of social work, only a limited number of schools actually require such courses. In dealing with social workers, then, the nutrition specialist will have

to adapt her methods and materials to persons with limited information, and with limited time. A social worker with 200 or more families as a case load must have material in readable, simple form if she is to be able to translate it to a worried, tired housewife who is more anxious about the wherewithal to buy food than she is about the combinations of food with which she feeds her family. The nutritionist's scientific background of nutritional essentials is taken for granted but she must convert her knowledge into terms of everyday, practical situations. A few examples of meals as they might be planned will be far more helpful, at least in the beginning, than pages of information about food essentials in terms of calories, vitamins, minerals, etc. The nutritionist becomes a teacher and like the teacher she must plan the learning process step by step, accelerating the pace for those able to take two lessons in one "sitting".

In the third place, I hope the educational program of the nutritionist in the welfare agency will include psychology, so that she will be aware of the psychological implications as well as the physical effects of food. Work with families must begin with them "as is"; that is, at the level of food habits to which they have been accustomed. Even before the depression, the choice of food of great numbers of such families was bread, meat and potatoes, and maybe pie. To the family in the midst of adversity, bewilderment and anxiety, the suggestion of change in choice of foods is sometimes interpreted as further indication of the family's inability to manage its own affairs. The nutritionist must be able to supply the social worker with recipes for use of staple foods provided by the Federal Surplus Commodity Corporation, in ways that are ingenious enough to furnish variety and simple enough to be followed by a woman too burdened to be interested in experimentation. It is assumed, of course, that national and racial food habits would be taken into consideration also. In addition to being a scientist, the nutritionist who attempts an educational job should bear in mind that she must be something of an artist. If the scientist could be half as eloquent and enthusiastic as the commercial advertiser, what strides we might make in inculcating the essentials of diet!

My final suggestion may be interpreted as presumptuous but is made by one who is well aware of the mote in the eye of her own profession: it is, to broaden your horizons. Nutrition is a highly technical specialization. Its practice in the laboratory differs from its application in social situations. One skill is required to determine the vitamin content of an ounce of dried apricots but quite another skill is required to induce a family to include dried apricots in their diet. I do not mean that the nutritionist should try to study "case work" which is the tool of the social worker. Rather, she needs some of the background courses in psychology, sociology, and economics, which are the foundation for social work education. The nutritionist does not need the social worker's technics but she does need an understanding of human behavior, and of group and community relationships. My plea, therefore, is that the home economist who will serve as a consultant to another professional group should include in her education a seasoning from the social sciences. Not only will she be more effective in accomplishment but

she will receive enriched personal satisfactions from her job.

In this period of rapid social change, your profession and mine—nutrition and social work—are faced with tremendous responsibilities and opportunities. Our objectives are the same, to make life more bearable for our fellowmen by bringing them knowledge peculiar to our respective fields. We are rather like the minister whose small son was asked "Does your father ever preach the same sermon twice?" and who replied "I guess he does, but he hollers in different places." As long as we agree upon the theme we can continue to "holler in different places". Ours is the task and the opportunity to relate our special knowledge to the social forces at work in this country today.

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In my state physicians see some undernutrition due to economic adversity. We see more which is the result of perverseness of appetite in the midst of plenty. The largest group is found, however, among older persons who limit themselves needlessly because of faulty advice or inherent fear. Thus we have no class comparable to the anemic group in Puerto Rico or the pellagrins in the Southland of the United States, where wholesale preventive methods are applicable. Our dietary problems concern certain individuals of highly varied tastes and equally diverse backgrounds. Geriatrics ["geron", old man; "iatrikos" medical treatment—i.e. that branch of medicine which treats of the diseases of old age] should interest us as physicians not alone in the classic philosophic euphemisms that have lent an aura of repose to the senile in exchange for activities denied. Rather must we take up its practical physical aspects and preach less fear of food with people over the age of 50. I propose to hold my discourse for the most part to that phase of medical direction for the aged.—*Tuohy, E. L.: Geriatrics in relation to an adequate energy producing and protective diet, J. A. M. A. 114: 223, 1940.*

THEORY AND PRACTICE IN THE DIETETIC TREATMENT OF GLOMERULAR NEPHRITIS[1]

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DIETETIC practice in the management of glomerular nephritis today is in a state of chaos. We know that the traditions handed down from the past are for the most part irrational and often harmful, but we have no generally accepted principles to guide us for the future. And so today we find, even in those institutions that are consciously endeavoring to base their dietetics on reason, a variation in practice so great that in its extreme forms it arrives at self-contradiction. As an example, the different proposals for the management of the initial stage of the disease may be cited. There is one justly famed authority who gives his patients no water as well as no food. Yet there are other reasonable people who believe that a great quantity of water, much more than the patient wants, is beneficial. Some think it important to see that a more than adequate quantity of protein is consumed, while others, apparently just as sane, advocate as far as possible a protein-free diet. The result, of course, is that many sensible people who have no basis for an opinion of their own adopt a nihilistic position and let their patients have anything they fancy.

It is important to recognize that this extraordinary state of disorganization is not due to a lack of knowledge of the disease itself, for there is a widely extending concensus as to its nature and course. Nor is it due to any misunderstanding of the principles of nutrition which today are more firmly based on practice than ever before. It is quite clearly a dietetic disorientation due to lack of theory. That is why this is a proper subject for discussion before this Association.

During the last ten years in the Outpatient Department of Stanford University Medical School we have planned diets for patients with glomerular nephritis in accordance with a particular theory. This theory runs to the effect that in all stages of glomerular nephritis the diet should be such as to fulfil two requirements: first, that it should require the minimum of work from the kidney; and, second, that it should provide for adults the essential elements for maintenance and for children enough for sub-maximal growth.

It would be more correct to call this a plan of action, an hypothesis, rather than a theory, because the principle of advising diets that give as little work as possible to the kidney when it becomes the site of the progressive destructive change that we see in glomerular nephritis, is not a theory in the sense that we understand how and why a state of relative rest should be beneficial. We do not understand exactly why a traumatized joint, or a damaged heart muscle is helped toward recovery by rest. That is, as yet, more an

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opaque fact of clinical experience than a process in which we can clearly see all the consecutive events and relations. But in the case of glomerular nephritis we do not have for guidance even the clinical observations that determine our treatment for damaged joints or hearts, for there are no well-controlled series of observations on patients to prove that rest is somehow or other good for the kidney in nephritis. So when we start with the assumption that rest is good it is well to remember that we take a step in the dark, a step that is warranted only by analogy based on our experience with disease in other organs.

On the other hand, when we consider the actual concrete situation in nephritis, we can see there is a reason why we get no support for our theory from everyday experience in the treatment of the disease. The reason is anatomical. There are no nerves in the kidney whose stimulation produces a sensation of pain. At the start of glomerular nephritis there is a sudden and intense inflammation in the kidney, an almost explosive reaction that kills a considerable proportion of the renal cells and in severe cases may lead to such extensive tissue destruction that the whole architecture of the kidney collapses. Yet as far as the kidney is concerned the patient experiences no sense even of discomfort. Unless he is stopped by some extrarenal manifestation of the disease he is likely to go off to work and have steak for lunch. He often does. Contrast this with what happens if the same patient is run over by an automobile and has a similar degree of damage done to his knee joint. Then the least attempt to get any work out of the damaged joint leads to such an intensification of agony that we at once immobilize the leg and do everything to induce a state of rest. We act in that way, of course, in pity, not because we have a theory that rest is good. But in thinking it over afterwards we are inclined to believe that our emotional reaction may also have been rational, that what the patient demanded and we *had* to give was not only the immediately necessary but ultimately the best thing we could have done. For we see what happens to traumatized joints that do not get rest. In some cases of tabes there is a degeneration in the spinal cord that completely blocks the transmission of pain from the knee joint. That joint is then as insensitive as the kidney. When the patient wrenches his knee he does not keep it still, he works his damaged joint. The result is a disintegration of the knee joint more extreme and bizarre than that directly produced by any trauma or infection. It is therefore at least possible that part of the extraordinary distortions in the architecture of the kidney seen in Bright's disease (1) may be no direct consequence of the disease itself but, as in Charcot's joint, the product of a combination of a disease process and the demand made on the damaged organ to do its usual amount of work.

If we are to act on the hypothesis that we should reduce work to a minimum in nephritis it is necessary to have a precise idea of what constitutes the work of the kidney. We know what the heart does. The heart works to move blood. The kidney works to move water. The heart moves blood from its interior into the vessels and work is required because the blood has to be moved against the resistance of the already full arteries and arterioles. The kidney moves

water from the glomerular filtrate in the interior of the tubules into the vessels that run along the outside of the tubules and work is required because the movement has to be made against the resistance of osmotic pressure. This resistance to the movement arises from the fact that the osmotic pressure of the concentrating urine in the lumen of the tubules is greater than the osmotic pressure of the blood in the capillaries and unless work is done the movement of water will be in the contrary direction.

This concept of the work of the kidney is that of the physical chemists. From measurements made on simple concentrating systems in which water is moved against the resistance of osmotic pressure they find that over any given period of time the amount of work in concentrating the glomerular filtrate depends first on the sum of all the urinary constituents excreted in the urine during that time, and second on the degree to which each urinary constituent becomes more concentrated in the urine than the blood. An oversimplified but substantially correct application of the formula to the kidney is as follows:

$$\text{Work (calories per 24 hours)} = 620 \times \text{Rates of Excretion} \times \log_n \frac{\text{Urine Concentrations}}{\text{Blood Concentrations}}$$

This formula is true for an idealized concentrating system that works without friction. No such system exists. If there is friction, and there always is, the work is increased. Since we do not comprehend the exact mechanism of urine formation by the kidney we do not know what "friction" there may be in that machine. But if we assume that "friction" is constant we can estimate the rate of excretion of various urinary constituents and their concentration in the urine and blood and from these data calculate the minimum amount of work they impose on the kidney.

Now let us consider the various urinary constituents. Under ordinary conditions often as much as 90 per cent of all the substances in the urine consists of sodium chloride and urea. Since the formula states that the work done varies directly as the rate of excretion it seems clear that from a practical point of view a reduction in the rate of salt and urea would be of prime importance if we want to reduce the work of the kidney. But let us now consider the second term of the formula, for the statement is that work also varies as the $\log_n$ of the $\frac{\text{Urine Concentrations}}{\text{Blood Concentrations}}$. In the case of sodium chloride we usually have, under our present methods of cooking, an excretion of about 10 gm. of salt in a 24-hour volume of 2000 cc. This is a urine salt concentration of 0.5 per cent. But we know that there is a regulatory mechanism at work that keeps the salt concentration of our blood at 0.5 per cent. When we divide 0.5 per cent urine concentration by 0.5 per cent blood concentration, the quotient is 1 and the natural logarithm of 1 is zero. This means that so long as this equality of salt concentration exists, the rate of salt excretion may change to any degree and yet will give no work to the kidney because that rate will always be multiplied by zero, and so itself will become zero. Since the urine is never more than four times more concentrated than the blood with respect to sodium chloride, it follows that any rate of salt excretion is multiplied by such a small fraction

that the work for sodium chloride excretion, when it exists, is always small.

Now, how about urea? Under ordinary dietary conditions we excrete about 20 gm. of urea per 24 hours in 2000 cc. of urine. This means that a usual urine urea concentration is about 1 per cent, a concentration 50 times greater than that of the blood. The natural logarithm of 50 is 3.9 and when the rate of urea excretion, expressed as gram mols, is multiplied by this factor and by the constant we find (after a correction not included in the formula we gave) that the work of excreting 20 gm. of urea requires from the kidney 632 gm. calories of work per day. Borsook (2) has calculated that ordinarily 76 per cent of all the work of the kidney is spent on urea excretion.

Urea is the end-product of the catabolism of protein. With every increase in protein taken as food there is an increase in urea excretion. Therefore if we want to devise diets that will give the minimum amount of work to the kidney it is to their protein content that we must give first consideration.

But conclusions based on mathematical formulas are too abstract to be convincing unless we know all about the circumstances under which they are applicable, and that is exactly what we know very little about in our patients. But there is much more concrete evidence as to what work does to the kidney, evidence that we can see and feel and weigh. When rats take diets that are the same except that they contain increasing amounts of protein, we are told by the formula that these diets will give the kidney increasing amounts of work. In all such experiments, as protein consumption and, presumably, work increases we find an increase in the size of the kidney. This increase has all the characteristics of what is called "work hypertrophy" and is analogous to the progressive increase in the size of muscles as they are given more and more work.

There is another way in which we can observe the effect of work on the kidney. Instead of changing the diet we can change the kidney. For if we make the kidney smaller by cutting out part of it and leave the diet the same, the diminished kidney has to do all the work and the work per nephron is increased. We find that the more kidney we cut away the more new kidney is formed, *i.e.* the smaller the kidney left and the more it has to do the greater is the hypertrophy of renal tissue (Fig. 1).

It will be noted that when you cut off say 50 per cent of the kidney, you do not get 50 per cent of new kidney formed. You get roughly only half of the amount you remove restored. The kidney is still smaller than it was originally and one would suppose that it would therefore still have more work per nephron than before the operation. But if, after allowing for the growth of new kidney, we observe how these still small kidneys work, we find that there is a change in the concentration ratio. The urine urea concentration has decreased and the blood urea concentration has increased, so that even though these dwarfed kidneys are excreting more urea per gram of kidney than the original kidney the concentration changes have lessened the work per nephron so that those that remain have no more work to do than before (Fig. 2).

The conclusion we draw from these observations is that the work per nephron is the stimulus to the increased for-

mation of new kidney and that this new formation stops whenever the degree of increase and the change in concentration ratios have again restored the original amount of work per renal element.

This is the theory and these are some of the reasons why it is worth while to put it into practice. But the reasons given only show that the work of the kidney determines its size as muscular work determines the size of a muscle, and though we have shown that when the kidney becomes smaller as it does in glomerular nephritis it hypertrophies

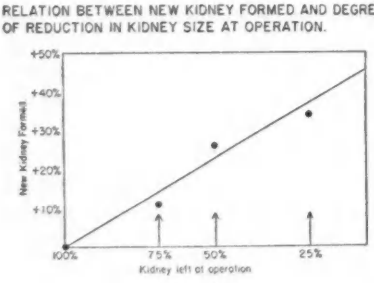

FIG. 1

until the work per nephron is no more than before, we have given no reason why we should decrease work when the kidney is diseased; we have only assumed that rest would be good because it has been found to be so in disease of other organs. However, not long ago, Farr and Smadel (3) gave low, medium and high protein diets to rats with Masugi nephritis, a disease very similar to glomerular nephritis. On the low protein diet there was rapid improvement and healing; on the medium intake about 50 per cent of the rats became uremic; and on the high protein diet the disease progressed to nearly complete destruction of the kidney with resulting death from uremia. These experiments, in my opinion, end the argument. They give a complete experimental basis for the dietetics of rest in nephritis.

So much for theory. How about practice? The theory requires a quantitative dietetics. But since glomerular nephritis, except at the very beginning and the very end, is a home, not a

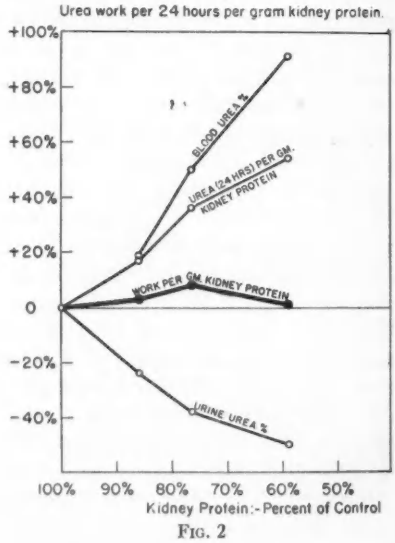

FIG. 2

hospital disease, the dietetics must be a home dietetics and the only available dietitian is the patient himself. Simplicity is therefore essential. Measurement is done with the standard measuring cup and spoons. The list of food values refers to cooked foods ready to serve. Only protein, calorie and salt values are given. In the case of complex foods such as soups and puddings, recipes with values for easily measured volumes are given.

That is all the material equipment needed. The next step is to gain the cooperation of the patient. We have usually failed to get permanent results when we simply ask the patient to follow a sample diet, measuring the food volume and introducing variation by choice of equivalent quantities of substitute foods. With this method the patient simply obeys orders. This is enough for emergencies but a blind obedience is rarely long continued and from most patients with glomerular nephritis, intelligent cooperation, not merely obedience, must be asked, since we often have to carry on for years and decades. So we start by getting the patient to help us in making an approximate estimate of his usual diet. He is given the list of food values and shown how to determine about how much protein and how many calories there are in his slice of toast and egg for breakfast and so on until we get the total protein and calories for the day. The patient, the dietitian and the doctor now go into consultation using this estimate as the starting point. The doctor tells the patient that the evidence collected shows there is something wrong with the kidneys, explains that it is necessary to change the diet so that the kidneys will be given as little work as possible and asks the patient if he can collaborate toward this end. Then, in the presence of the patient, the dietitian and doctor go over the details of the average diet estimate, eliminating one food and adding another until the protein, calorie and salt intakes appropriate for the intensity and degree of the disease and for the requirements of this particular patient are reached. With patients on relief it is necessary to get additional foods; in almost all cases some source of the vitamin B complex is necessary, but always we attempt to fit the diet to the economic and racial status of the patient. After the reasons for the changes have been given, the patient is told that this diet cannot safely be given unless he is able to measure his food intake and write down the protein, caloric and sometimes the salt content of each food, so that he may know how much he has taken each day. When he returns he brings his diet lists and a 24-hour urine specimen, and the rate of urea and salt excretion is determined while his clinical status is being ascertained. Then the results of the analyses are given to him and his diet sheets examined in detail to find any mistakes that might account for disagreement between the observed rates of excretion and the diet he thought he was getting. At first there are usually gross errors, but after a few visits they are eliminated and the theory and practice of the patient begin to approximate one another. When that happens we have succeeded in converting the patient into something of a dietitian, and when clinical changes warrant change in the diet it is sufficient to ask the patient to increase or decrease his protein, caloric or salt intake and it will be done without further effort on our part.

The conclusion drawn from our experience is that a successful conjunction of theory and practice in the dietetics of glomerular nephritis requires the simultaneous collaboration of at least four people, *i.e.* the patient, the laboratory technician, the doctor and the dietitian. I believe it is not only

necessary for these four to be working at the same time, they must also be in the same room, for each one has necessary objective facts to present, and it is in the conversation of these four people, that the fusion of theory and practice is attained.

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The Earliest Example of Canned Food

IN the Museum of the Royal United Service Institution, London, is a glass tube containing roast veal taken from a can more than a hundred years old. The can, cut round with chisel and hammer, is also on view and is the earliest known example of canned food. It formed part of the stores taken by Sir William Parry in his arctic expedition of 1824 and was brought back unused. At the request of the International Research and Development Council, the museum sanctioned the opening of the can, so that a chemical and bacteriologic examination might be made of its contents. No trace of preservatives was found. The contents were found in perfect condition. Some of the meat was given without ill effects to a cat, and ten rats were fed on it for some days, providing a testimonial to its quality by putting on weight. Although a Frenchman invented the process of canning at the end of the eighteenth century, it was left to the English firm of Donkin & Hall to make practical use of his discovery. They set up in business in 1811 and two years later their products were being used by the navy and army. In 1814 Sir Joseph Banks, president of the Royal Society, wrote in praise of the nutritious qualities of their "embalmed provisions." In this year also the firm supplied the expedition to Baffin's Bay, which Parry joined as a lieutenant. Five years later on his first voyage to discover the northwest passage, canned meat, soup and vegetables formed a valuable aid in combating scurvy.—*Foreign Letters, J. A. M. A. Vol. 114: 338, 1940.*

DIET AND RESISTANCE TO TUBERCULOSIS[1]

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INCIDENCE AND DISTRIBUTION OF TUBERCULOSIS

TWO general types of tuberculosis occur in man: "first infection type", produced by an initial infection of any part of the body with tubercle bacilli; and "reinfection type", in which reinfection occurs in any part of the body in patients who harbor foci of primary tuberculosis and whose tissues were rendered immunologically abnormal by the first infection (1). The first infection or the so-called childhood type of tuberculosis may occur at any time during the life span. The lesions of this type of the disease are found most frequently in the thorax but in districts where raw milk from non-tuberculin tested cows is used, other regions of the body may be involved (1). According to Myers and Harrington (2), the reinfective type of pulmonary tuberculosis is not common under the age of 10 years but after this the incidence increases and usually reaches a peak at about age 25, then slowly decreases but remains the primary cause of death until the age of 40 or 45 years.

The first infection type most frequently occurs during early childhood. Among 6089 children admitted to three general hospitals in New York City, an average of 13 per cent of the boys and 15 per cent of the girls reacted positively to the tuberculin test, and among 1965 children attending seven "well-baby", preschool or other clinics, 15 per cent reacted positively. Of the latter group, 9 per cent were under 5 years of age; 16 per cent, in the 5 to 10-year group; and 40 per cent, the 10 to 15-year group (3). Among Philadelphia school children in the 15-year group, 80.4 per cent gave positive reactions (4). From a study of tuberculosis among children in Massachusetts, Chadwick (5) reported a gradual rise in rate of infection from 15 per cent at age 5, to 45 per cent at the end of the high school period.

Under the direction of the National Tuberculosis Association, many school officials have advocated annual tuberculin tests for all children. The tuberculin test is important not only because it detects many cases of the disease in the early stages which by proper care may be protected against reinfection, but also because it calls attention to the importance of frequent medical examinations, the danger of contact with active cases and the importance of the food intake and other factors which may tend to lower resistance.

STATE OF NUTRITION AND TUBERCULOSIS

The resistance of an individual depends upon a number of factors including the duration of exposure, the number of tubercle bacilli, the virulence of the bacilli, pre-existing infection, and the state of nutrition. There is evidence that there are constitutional factors which prevent multiplication of tubercle bacilli in the body and acquired factors

[1] Read before the General Session, American Dietetic Association, Los Angeles, August 30, 1939.

which through allergy protect against reinfection (6–9). Miller and Rappaport (10) believe that on first infection with tuberculosis the immediate reaction of the body is nonspecific but that this reaction produces a specific immunologic process through which resistance to the disease is acquired.

Low resistance to tuberculosis has long been associated with malnutrition but unfortunately there is no standardized procedure for judging the state of nutrition. One investigator may consider underweight, as judged by deviation from average weight figures, an indication of malnutrition, while another may include under malnutrition only those cases which show symptoms of the well-known deficiency diseases. There are, however, many borderline cases of poor nutrition which do not show signs of specific dietary deficiencies or even loss of weight (11–13).

Malnutrition may be the result of one or a combination of factors such as: food intake inadequate in total energy value or in certain essential food constituents; faulty food habits; disturbances in digestion, absorption or metabolism which may interfere with the normal utilization of the food constituents; the presence of infection which may greatly increase the food requirement above normal levels; and too little rest and sleep to permit normal repair of the body. One child may show all the signs of excellent nutrition while another in the same family, living under identical conditions and receiving the same diet, may show marked signs of malnutrition.

Malnutrition is frequently present before the onset of tuberculosis and thus may be an important factor in the breakdown of the defense mechanism against infection and particularly against reinfection. Brown (14) believes that tuberculous children may be more or less immune to new sources of infection yet when they grow up, an inadequate diet, too little sleep and other factors may so lower resistance that they succumb to their own tubercle bacilli which they have carried about for years. This occurs most frequently between the ages of 18 and 30 years.

DIETARY FINDINGS IN EXPERIMENTAL AND CLINICAL TUBERCULOSIS

Vitamin A. There is some evidence that a deficiency of vitamin A lowers resistance to tuberculosis in experimental animals (15–20). In vitamin A-deficient animals infected with tuberculosis, the survival time is greatly reduced as compared with animals on a normal diet (17, 21). Finkelstein (22) found that tuberculosis in mice deprived of vitamin A and carotene runs a more severe course than in the controls receiving 0.005 mg. carotene per day. The acuteness of the infection appeared to vary quantitatively with the amount of carotene added to the vitamin A-free diets.

Sherman and Burtis (15) found that the influence of the level of intake of vitamin A during the early weeks of life was pronounced and long-continued. Clausen (23) found that when vitamin A is withheld during the period of rapid growth the tissues are so altered that susceptibility to infection is increased, but if vitamin A is present in adequate amounts during this period the body may subsequently be depleted of its stores without developing a marked decrease in resistance.

The administration of vitamin A may

have a favorable influence on the course of tuberculosis in experimental animals (24, 25). Getz and associates (26) have recently reported a healing effect of cod liver oil when applied topically to experimental tuberculous lesions of the skin of guinea-pigs. The fractions of cod liver oil most active in the healing of the tuberculous lesions are those containing the greatest amounts of vitamin A.

There is evidence that the primary effect of vitamin A deficiency is degeneration of the epithelial cells, and the value of vitamin A in the maintenance of normal resistance may lie in its power, through maintaining normal mucous structures, to inhibit the passage of bacteria through the epithelial surfaces. In 1930 Mellanby (27) attributed anti-infective properties to vitamin A but there is no evidence that vitamin A increases the bactericidal power of the blood. Osborne (28) reported that the serum complement of the blood of rats, on vitamin A-deficient diets, tends to be lower than that of animals on diets supplemented by cod liver oil. Anderson and Fraser (29) found that a caloric deficiency produces a decrease in the natural hemolytic activity of the whole serum toward rabbit erythrocytes along with a diminished activity of the serum complement, but the same diet supplemented with cod liver oil had no influence on the immunological reaction.

Clinical studies indicate that mild deficiencies of vitamin A are comparatively common (26, 30, 31) and that such deficiencies may lower resistance to infection (21, 26, 30). Clausen (32) reports that infections are more frequent and twice as severe in children whose diets have not been supplemented with vitamin A by the addition of cod liver oil and vegetables. He believes that a constitutional state characterized by susceptibility to infection and a loss of resistance exists in such infants but that an adequate diet, particularly an adequate intake of vitamin A, tends to prevent development of this condition.

During the World War when Denmark exported unusual amounts of dairy products the death rate from tuberculosis reached the highest level in many years but it fell again after laws were passed limiting the exportation of these products. Wagner (33) reported that milk fat-free diets favor the development of tuberculosis in children and that tuberculous children showed greater improvement during the periods in which they received diets rich in milk fat than during the intervals on diets of equal caloric value in which the milk was fat-free. Vaile (34) found that among his private patients those who habitually consumed diets high in milk fat were less susceptible to tuberculosis than those who used little milk fat. Basu (25) attributes the high incidence of tuberculosis in India to the consumption of diets deficient in dairy products and other good sources of vitamin A.

Burns (35), from a study of data collected on the duration of breast feeding and the type and quantity of milk used in the regular diets of 110 tuberculous children under 5 years, concludes that pulmonary tuberculosis occurs in children who receive a small amount of milk rather than in those who receive liberal quantities. Of the 110 children, 43 received no fresh milk at all after they were 4 to 6 months old. Resistance to the disease among children in groups receiv-

ing an adequate allowance of milk was greatly increased.

The recent work of Getz and associates (26) indicates that hypovitaminosis A occurs in active tuberculosis. In a biophotometric study of 197 mostly fever-free and ambulatory tuberculous patients including those with minimal disease and others with moderately advanced and far advanced tuberculosis, 53 per cent of the cases were found to be pathologically deficient in vitamin A. The degree of vitamin A deficiency in the patients paralleled the extent and activity of the lesion.

Vitamin A therapy may be of value in the treatment of tuberculous patients in whom the vitamin A reserves of the body have been depleted. Gordon and Titherington (36) reported improvement in some of their tuberculous patients following the injection of a cod liver oil concentrate. They suggest this method of treatment for patients who show a low tolerance for foods rich in vitamin A.

Vitamin C. A deficiency of vitamin C lowers resistance of the guinea-pig to tuberculosis (37–40). McConkey and Smith (41) put guinea-pigs on diets partially deficient in vitamin C and fed them daily doses of tuberculous sputum. Among the 37 animals on the vitamin C-deficient diets, 26 developed the disease. Greene, Steiner, and Kramer (42) report that tuberculous guinea-pigs on vitamin C-deficient diets live only 4 or 5 weeks while infected animals on the same diet supplemented with small quantities of orange juice can be maintained alive but in a chronic state of scurvy for several months.

There is evidence that the administration of vitamin C in excess of the normal requirement may increase the resistance of guinea-pigs to tuberculosis (18, 43). De Savitsch and associates (44) found smaller lesions and a better physical condition in guinea-pigs inoculated with tubercle bacilli and fed a normal diet supplemented with vitamin C, than in the inoculated and untreated controls. Birkhaug (45) found a progressive hypovitaminosis C during experimental tuberculosis in the guinea-pig. A significant vitamin C deficiency occurred in the suprarenals of the tuberculous animals. This deficiency was completely overcome during the early stages of infection by the oral administration of *l*-ascorbic acid.

There is no evidence that vitamin C has any specific protective value in tuberculosis but there is evidence that it is necessary for normal complement activity (46–49). Ecker and associates (50a) have shown a definite correlation between the amount of vitamin C in guinea-pig serum and the complement titer. They found that a decrease in complement activity in scorbutic guinea-pigs parallels a decrease in the vitamin C content of the serum and that administration of ascorbic acid increases the complement titer in scorbutic guinea-pigs. These results have recently been confirmed in man by Ecker and his associates (50b), and by Chu and Chou (51) who report that an increase in complement function follows the administration of ascorbic acid or the addition of fresh vegetables to the basic diet. Ecker and his associates suggest that a low complement titer may lower the general immunity of the body.

Clinical reports indicate that subclinical scurvy is common and that even this mild vitamin C deficiency may be an important factor in resistance to infections (52–55). Meyer (56) found that

in infants, not definitely scorbutic, the tendency to develop repeated respiratory infections is greatly reduced by the daily administration of from 50 to 100 cc. of orange juice.

According to Heise and Martin (57) and others (58–60), hypovitaminosis C is invariably present in pulmonary tuberculosis and the degree of deficiency parallels the extent and activity of the tuberculous disease. They attribute the deficiency to two factors: an abnormal chemistry of the intestinal tract and an increased vitamin C requirement in the tissues.

The administration of vitamin C has a restraining influence on the progress of tuberculosis (58, 61, 62). McConkey (63) reports that patients suffering from intestinal tuberculosis improve when the diet is supplemented with orange juice. He suggests that supplements of vitamins A and C may prevent intestinal tuberculosis and recommends the addition of tomato juice (3 oz.) and cod liver oil (½ oz.) to the ordinary hospital diet in the treatment of intestinal tuberculosis. Radford, De Savitsch and Sweany (64) report that the administration of either orange juice or crystalline vitamin C to tuberculous patients produces a favorable effect on the blood cellular elements, hemoglobin and in the albumin globulin ratio. Heise and Martin (57) report a study of 44 cases of tuberculosis, minimal, moderately advanced and far advanced, and in every stage of activity as shown by x-ray, symptomatology, and sedimentation rates. The uncomplicated cases, on controlled diets, showed a parallelism between the activity of the disease and the daily excretion of vitamin C. On supplements to the diets of 4 oz. orange juice or 55 mg. ascorbic acid, patients who excreted 16 mg. ascorbic acid daily within 2 weeks after the addition of the vitamin C supplement were considered as giving a positive reaction. This group included 14 inactive cases of tuberculosis. Of the negative group, 80 per cent were active cases. They state that tuberculous patients require from 55 to 138 mg. ascorbic acid daily to maintain vitamin C equilibrium as compared with a normal requirement in health of from 15 to 20 mg. daily. Gogga and Scholz (65) from tolerance tests, with the administration of 200 mg. vitamin C daily to patients on the same basic diet, conclude that vitamin C deficiency in tuberculosis can be prevented only by the administration of vitamin C concentrates in addition to a normal dietary intake of the vitamin. The minimal requirement of their patients varied between 3 and 800 mg., depending upon the extent and activity of the tuberculous condition, above the normal daily requirement. Behr (66) determined the 24-hour excretion value of 20 pulmonary tuberculosis patients on a standard diet and then administered 300 mg. ascorbic acid. In severe progressive tuberculosis a hypovitaminosis existed with an increased retention of ascorbic acid.

Burckhardt and Weister (67) report that the daily excretion of vitamin C for 64 tuberculous children of school age under sanatorium treatment and on a good diet varied from 11 to 90 mg. Thirty-two children were given 300 mg. ascorbic acid daily for 4 days and the daily urinary excretion determined. Of these, 16 showed only slight evidence of tuberculosis or the disease had healed and in 16 the disease was active. Of the latter group, 5 retained from 100 to 400 mg., 4 from 400 to 800 mg., 5 over 800

mg. and only 2 showed no retention of ascorbic acid. Of the 16 showing slight evidence of disease, 8 showed no retention, 6 from 100 to 400 mg. and 2 from 400 to 800 mg. ascorbic acid. Similar results are reported by Jetter and Bumbalo (68) and by Singer and Van Bark (69). Jetter and Bumbalo compared the vitamin C excretion of groups of tuberculous children and normal controls on a standard diet containing from 55 to 65 mg. vitamin C. The addition of 50 mg. synthetic vitamin C daily produced an immediate rise in the urinary output of vitamin C in the normal children but the tuberculous children, with an average basic excretion of 6.4 mg. per 24 hours, required an average of 750 mg. in 15 days to produce a rise in excretion to 10 mg. per 24 hours. The maximal output, 25 mg. per 24 hours, was attained on the 24th day after 1200 mg. had been ingested. When the vitamin C supplement was discontinued, the excretion of the tuberculous children promptly fell to the previous subnormal levels. They suggest an increased vitamin C intake as a therapeutic measure. Singer and Van Bark report that tuberculous children on an ordinary hospital diet, providing approximately 1 oz. orange juice daily, showed a decrease in the ascorbic acid content of the blood. After the administration of from 50 to 100 mg. ascorbic acid (instead of orange juice) daily for 4 days to 2 weeks there was an increase in the ascorbic acid content of the blood to normal or high levels.

Multiple Dietary Deficiencies. These play an important rôle in nutrition (11, 13). Hopkins (70) believes that "even a relative deficiency in any one of the vitamins may be a cause of sub-normal health and if long continued in infancy or youth may do permanent harm".

Gordon and Flanders (71) and Gordon and Tai (72) report a high frequency of acute respiratory infections in individuals with marked malnutrition. In many of their patients the weight level for adults had been from 15 to 30 per cent below normal, and for children 10 per cent below normal for a period of from 1 to 10 years before the onset of tuberculosis. The dietaries of the majority of the adult patients had been low in caloric value from 1 to 2 years before tuberculosis developed. The daily food intake of these patients averaged 1400 calories and was often as low as 800 calories. All the dietaries showed a marked deficiency in minerals and vitamins. They increased the caloric value of the diet of 900 of their ambulatory and bed patients and a similar group received supplements to the diet without change in the caloric value. A reduced incidence of intercurrent respiratory infections was noted in the majority of those patients who gained weight on either of the dietary regimens. They believe that cod liver oil may have improved the condition of the epithelial tissues in the respiratory tract and thus reduced the incidence of intercurrent infections. Mineral supplements to the diet had no value except for a few patients who could not take milk. There was no evidence that a change in diet influenced the deposit of lime salts in fibrous tissue in the lung. Brewers' yeast had no value. They state that a prolonged deficiency of accessory food substances may favor the development of acute respiratory infections and that the administration of these constituents may be

of value in the treatment of respiratory diseases.

DIET THERAPY IN TUBERCULOSIS

A gain in weight was at one time considered the best criterion of improvement in the tuberculous patient. According to an old adage, "patients with tuberculosis should eat once for themselves, once for the fever and once to gain weight". This theory seems to have been carried over into modern practice and for a long time the tuberculous patient was urged to eat large quantities of milk and eggs. Of the more recent special diets, the Gerson-Sauerbruch-Hermannsdorfer and the Gerson diets (73) have attracted the most attention. The Sauerbruch diet as modified by Hermannsdorfer is acid in reaction. Hermannsdorfer believes that an increased acidity favors the tissue defense against infection. Gerson's modification includes a greater restriction of protein and produces an alkaline ash. Since equally good results have been reported by these diets the acid-base ratio is apparently of less importance than the accompanying high vitamin and high mineral content.

Both diets are low in sodium chloride and high in other mineral salts and vitamins. The authors of both diets, the acid and the alkaline, attribute the good results to the low sodium chloride content. They believe that the usual consumption of sodium chloride is far in excess of actual need and that this excess disturbs the mineral metabolism which in turn can be corrected by excluding sodium chloride and including liberal amounts of other mineral salts in the diet.

There is evidence that the indiscriminate use of a salt-free diet may be harmful. Stempa (74) reports that exclusion of salt from the diet causes digestive disturbances and lowers resistance while an excessive amount will tend to reduce the serum calcium. In the treatment of bone and joint tuberculosis, he recommends about 2 gm. of sodium chloride daily and restriction of fluids. Wilder and his associates (75) report that in patients with Addison's disease a withdrawal of sodium salts almost invariably precipitates characteristic signs of adrenal insufficiency with corresponding changes in the electrolytes of the blood. Analysis of the blood in these cases indicated that a high intake of potassium is associated with a rapid loss of sodium chloride, while a low intake of potassium favors retention of these ions.

In general, a normal diet high in all the mineral salts together with vitamins B_1, A and C, and sufficient in quantity to maintain normal weight, seems to meet the requirements of the tuberculous patient. The carbohydrate content of the diet in pulmonary tuberculosis is usually restricted somewhat since the oxidation of dextrose increases the respiratory volume due to the increase in carbon dioxide elimination. Modification of the normal diet will depend upon the character of the infection. Any marked deviation in dietary constituents should be based on blood and urinary findings of the patient.

A STUDY OF THE DIETARIES OF TUBERCULOUS CHILDREN

A study of the dietary habits of tuberculous children indicates that multiple dietary deficiencies are prevalent

among children. Through the cooperation of Dr. Henry Chadwick, former commissioner of health in Massachusetts, the author studied the dietary records of 1000 cases of the childhood type of tuberculosis. These cases, which represent a cross section of the state population of school children, had all been tuberculin tested and given x-ray examinations.

Among this group of 1000 children, 80.1 per cent were classified as active cases of the childhood type of tuberculosis, 12.6 per cent as latent cases and 7.3 per cent were under observation as a safeguard against the development of pulmonary tuberculosis. The 5 to 10-year group included 32.4 per cent, the 10 to 15-year group 60.4 per cent and the 15 to 20-year group 7.2 per cent of the cases. There was a history of contact in 31 per cent of the cases, 16.9 per cent were 10 per cent or more underweight and malnutrition was reported in 27 per cent of the cases.

Dietary records previous to the onset of tuberculosis were not available, but all the children were follow-up cases for a period of from 3 to 11 years. At the first and at each subsequent medical examination, the food intake on the previous day, including the kind and amount of food, dietary habits, the amount of sleep, rest and exercise and other health habits which might affect the state of nutrition, were recorded by a nutritionist who interviewed the children and conferred with the mothers.

A comparison of the dietary records at the beginning of the observation period and over a period of years indicates that many of these children had been on deficient diets previous to the onset of tuberculosis. Table 1 shows a summary of the dietary records of these children at the beginning of the observation period.

A further analysis of the food intake shows that 24.3 per cent of the dietaries were deficient in protein of high biological value such as milk, eggs and meat; 63.1 per cent were deficient in milk and other good sources of vitamin A, and 84.6 per cent did not receive sufficient fruits and vegetables to provide an adequate vitamin C intake.

TABLE 1
Dietary findings

	Per cent
Adequate diet	5.4
No breakfast	40.4
Diets deficient in caloric value	54.1
Milk	
1 qt. daily	8.9
1 pt. daily	28.0
½ pt. or less	63.1
Egg	
1 daily	39.1
Very infrequently	60.9
Meat	
Daily	63.7
Very little or none	36.3
Vegetables	
1 to 3 daily	19.8
Very infrequently	80.2
Grain Products	
Inadequate in quantity	60.2
Candy in excessive amounts	38.6
Tea and coffee daily	43.1
Cod liver oil	00.8

On a well planned program, the majority of the children showed improvement in the physical condition as determined by frequent medical examinations. Only 8.2 per cent of the cases failed to improve. Among this small number, some of the children were employed, making it difficult for them to get sufficient rest, but the remainder of the cases failed to follow directions. Recurrence of

symptoms usually followed an interval during which a child failed to follow directions. Some of the cases previously under treatment at a sanatorium, after a few months at home, were again returned to the sanatorium for treatment.

In some cases (11 per cent), anorexia may have reduced the food intake; in others (13 per cent), financial circumstances made it difficult to supply an adequate diet, but in approximately three-fourths of the cases ignorance of the actual food requirement of children and prejudice against certain food materials were probably the most important factors. The British Committee on Nutrition (76) has recently reported a deficiency of protein of high biological value in the diets of children because of a popular prejudice against meat and cheese in the diet of children. McGovern and associates (77) report a case study of a mother and five children, in good financial circumstances, who presented varying degrees of hypovitaminosis C because of a dislike and consequent restriction of citrus fruits.

Improvement in diet was paralleled by improvement in the physical condition of the children. An increase in the milk intake to 1 quart daily and an increase in foods rich in vitamin C had a marked effect on the physical condition of the children. This improvement may have been due in part to the increased vitamin A intake since the diets deficient in milk were also deficient in other good sources of vitamin A. In addition to vitamin A, milk, of course, is a good source of calcium and other constituents which will tend to correct dietary deficiencies and improve the general state of nutrition.

The vitamin C intake, the most outstanding of the dietary deficiencies, is of interest when we consider the recent quantitative studies which indicate that a deficiency of vitamin C may have an important influence on resistance to infections, and that the normal diet must be supplemented with orange juice or some other good source of vitamin C to meet the increased requirement for this constituent in active tuberculosis.

The prevalence of multiple dietary deficiencies among these children confirms the early observation of McCollum (78) "that the diets of man are probably never highly satisfactory with respect to all factors but one, rather they are in some degree unsatisfactory with respect to two or three factors simultaneously." Mild dietary deficiencies which ordinarily may not obviously impair health may assume critical significance in tuberculosis.

SUMMARY AND CONCLUSIONS

1. The high incidence of tuberculosis among children emphasizes the importance of controlling all factors, specific and non-specific, which may tend to lower resistance to the disease.

2. Clinical findings indicate that gross dietary deficiencies are rarely encountered in medical practice but that subclinical deficiencies, which are comparatively common, may tend to lower the resistance of the body to infections.

3. Mild dietary deficiencies are not always the result of an inadequate food intake, but may be due to any number of factors including an increase in the requirement for specific food constituents, losses through disturbances in digestion, absorption or metabolism, food sensitivity, and food likes and dislikes.

4. There is no evidence that any one

dietary constituent has a specific value in the maintenance of resistance to tuberculosis but an adequate intake of all food constituents is an important non-specific factor in the maintenance of normal resistance to tuberculosis.

5. Vitamin A deficiencies are more prevalent among tuberculous patients than among non-tuberculous controls. Whether lack of vitamin A has a causal relationship to the disease is uncertain.

6. Vitamin A therapy seems to be of value in cases where the vitamin reserves of the body have been exhausted, and for patients who have a low tolerance for foods rich in vitamin A. The value of vitamin A in infections may be due to its influence in improving the nutritional status.

7. There is evidence that vitamin C is necessary for normal complement activity. A low complement titer may lower the general immunity of the body.

8. Hypovitaminosis C occurs in all forms of tuberculosis. There is an increase in the requirement and a subnormal excretion of the vitamin. The increase in requirement parallels the activity of the disease.

9. It is necessary to increase the dietary intake of vitamin C above normal levels in order to maintain vitamin C equilibrium in tuberculous patients.

10. Vitamin C therapy is of value in the treatment of febrile and far advanced cases of tuberculosis.

11. In planning dietaries the level of intake for vitamins A and C should be well above the requirement for each of these constituents and the total food intake should be carefully checked to avoid even a mild deficiency of any other food constituent.

12. A study of the dietaries of tuberculous children shows a deficiency of vitamin A in 63.1 per cent and of vitamin C in 84.6 per cent of the cases. Correction of these and other dietary deficiencies brought about an improvement in the physical condition of the children. An increase in the vitamin C and milk intake was followed by a marked improvement in symptoms.

13. The prevalence of dietary deficiencies among children indicates the need of quantitative studies of the vitamin A and C intake of tuberculous and normal children of the same age group and follow-up studies to determine whether or not there is a decrease in the incidence of the reinfective type of tuberculosis on an optimal intake of each of these constituents.

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To ASSIST a student in developing his ability to observe, to think, and to act for himself—all necessary prerequisites for self-action—Dr. C. M. Jackson once counciled, "Never tell a student anything he can observe for himself; never draw a conclusion or solve a problem which he can be led to reason out for himself; and never do anything for him that he can do for himself."—*On the Improvement of Medical Teaching, Proc. A. Am. M. Coll. 1912, p. 23.*

THE ASCORBIC ACID (VITAMIN C) METABOLISM OF COLLEGE STUDENTS. A COOPERATIVE STUDY[1]

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FORMAL cooperation in the field of nutrition research is a fairly recent development, and yet the need of it has long been felt. By now it is generally realized that the day has passed when a scientist can seclude himself in his laboratory and guard his work jealously from any colleagues who should chance to call. We now know that greater developments are bound to occur when research in different laboratories is coordinated and planned to a common end. Once this idea of collective action in research was well started, however, it had an enthusiastic reception, especially among the state colleges.

The first cooperative project in nutrition research was started at Iowa State College in 1935 when representatives of colleges in the north central states were invited to a meeting to consider the possibility of coordinated work. The project which grew out of that conference was a far-reaching and inclusive plan to study the nutritional needs of college students. Likewise a group was formed in the Northeast to study the ascorbic acid needs of college women and later the southern states formed a regional group to determine the variability of the mineral contents of vegetables grown under different environmental conditions.

Our own northwest cooperative project was started in 1937 when Dr. Todhunter of Washington State College called a meeting to consider the possibility of such an undertaking. We are an isolated group in the Northwest, too far away to attend many of the national scientific meetings where one may benefit by the stimulus afforded in meeting with others engaged in the same sort of research, and by the interchange of ideas thus possible. In order to meet the need of such association and to further any problem we might undertake, representatives of the experiment stations of Idaho, Montana, Oregon, Utah and Washington were invited to join forces. The problem to be chosen was of necessity determined and limited by the facilities available at the different laboratories, as well as by our nutritional interests. A study of the ascorbic acid metabolism of college students was selected as a timely topic, little being known about ascorbic acid requirements especially of this age group. It was felt, too, that a mass attack on the problem would give a collection of data that would prove of greater value than that acquired in any one laboratory.

The plan included a study of methods of measuring ascorbic acid nutrition and a survey of existing conditions among college students, the ascorbic acid requirement of this group, and finally a consideration of various factors which might affect the requirement. The work, now in progress, permits no definite conclusions as yet.

The first year's work consisted mainly

[1] Read before the General Session, American Dietetic Association, Los Angeles, August 29, 1939.

of a survey of the state of vitamin C nutrition as judged by excretion of ascorbic acid in the urine while the students were on their customary, self-chosen dietaries. Some ascorbic acid is always excreted, but the amount is roughly proportional to the intake. It has been postulated by one group that an excretion of less than 15 mg. indicates an intake below the so-called "minimum standard"; and by another, that less than 20 mg. excretion indicates too low a level of intake.

In addition to measurement of excretions alone, in some cases the effects were observed of a massive test dose of ascorbic acid given after the usual level of excretion had been determined. If the tissues of the subject are in a state of saturation so far as ascorbic acid is concerned, a large part of this test dose should be excreted within the next twenty-four hours. If, however, the subject has been on an inadequate intake of ascorbic acid, the tissues absorb a large part of the test dose and the excretion does not show a marked rise above the usual level. In all cases the students kept a record of foods consumed for a week before, as well as during the period of the test, so that it was possible to compare roughly the ingestion of vitamin C-rich foods with the output of ascorbic acid. We realize, of course, that as it is difficult both to estimate the size of servings and to remember to write down everything eaten, too much reliance cannot be placed on these records. However, such records do provide an indication of usual dietary habits, and it is interesting to note the individual differences.

As far as it was practicable, freshmen women were studied, since in their use of fruits and vegetables it was assumed they would reflect home practices rather than habits acquired in college as a result either of dormitory life or nutrition teaching.

During the first year, 170 measurements were made in four colleges. The range of excretions was wide, varying from 2.7 mg. per day for one student to 390 mg. per day for another. In view of these wide differences, it is of little use to find the average excretion as this would give no indication of the state of nutrition of the individual. More important is the determination of the number of students whose excretion is low. If we take 15 mg. as our minimum standard, 16.7 per cent of the students studied in Montana, 26.7 per cent of those in Utah, 22.0 per cent in Oregon, and 2.1 per cent in Washington fell below this level. In the group as a whole, 7 per cent were below this level. If we take 20 mg. as a criterion, the values are more nearly the same in the different colleges, from 30 to 35 per cent falling in the low group.

It is interesting to compare these results with those obtained in a similar study carried out in the Northeast, at Massachusetts and Rhode Island State Colleges. Freshmen women were studied in both places, and in general the whole range of excretions was lower than that in the Northwest; the average excretions were lower, and the number excreting less than 20 mg. per day amounted to 70 per cent in Massachusetts and 85 per cent in Rhode Island. If this level of excretion is an indication of ascorbic acid nutrition, then about one-third of the students in the Northwest and about three-fourths of those in Massachusetts and Rhode Island were

on an inadequate or borderline intake. In the Northeast, after instruction in nutrition and some urging to increase the intake of vitamin C-rich foods, about half of the subjects fell into the low group.

During this past year the search for a better method of measuring the state of ascorbic acid nutrition has been continued through determinations of blood ascorbic acid levels and the carrying out of saturation tests which we feel will give more valuable results than the simple urine studies. As mentioned previously, this study is in progress and the data gathered to date show the need of further work on greater numbers of subjects.

However, from a more practical viewpoint, the study, even though in its preliminary stages, indicates that much educational work needs to be done. What of those of this group who appear to be in a suboptimal condition of nutrition, if our standards of measuring this are correct? A survey of their dietary records reveals some interesting points. The students who live in the dormitories at Oregon State College have meals carefully planned by a dietitian. But what happens then? One week we happened to have as subjects two young women living in the same dormitory and presumably eating the same food. However, this fact was barely discernible from their dietary records as kept by themselves. One student ate twice as many servings of fruit and vegetables in ten days' time as the other; and our experimental observations reflected the difference. Many students omit breakfast and thereby are apt to lose the richest source of ascorbic acid for the day. Some others state that they "don't like" vegetables, and that it is "too much trouble" to eat fruit. Still others omit potatoes on the grounds that they are "fattening." Since the potato is an important source of minerals as well as of ascorbic acid, it seems unfortunate that it has fallen into such a state of disrepute within recent years and is so often considered merely as a food to be omitted from the diet in order to maintain a certain standard of slimness.

There is no doubt that practice lags way behind our knowledge of nutrition. Some of this lag must be due to sheer indifference and therefore in our teaching we must devise ways of making this knowledge more vital. At Utah State College, where students other than freshmen were studied, the level of excretion of ascorbic acid progressively increased from the freshman to the senior year, and was still higher for graduate students. Somewhat the same trend was noticed at Oregon State College, although there not much difference was found among students of the first three years; but seniors showed a higher excretion and graduate students still higher. Presumably this shows that with advancing knowledge of nutrition, increased use of vitamin-rich foods occurs. In the Northeast also, after the students of Massachusetts and Rhode Island State Colleges had been urged to increase their intake of ascorbic acid, the excretions rose correspondingly.

Such studies, then, make those of us who are concerned with the teaching of nutrition aware that constant and continuous teaching of the newer knowledge of nutrition is needed; that even in the midst of plenty, good nutrition does not automatically follow; and that the dis-

seminating of that knowledge is a live and constant challenge to us.

Likewise, these studies show how much can be accomplished by co-operation, even in an isolated group with infrequent contacts. The individual worker benefits as a member of the group, not only because more cases can be studied with more significant findings and different phases of the same problem studied simultaneously in different laboratories, but also because in a group of this kind the exchange of ideas and judgments is an invaluable aid. Co-operation might well be tried in other fields of work with equal benefit to the problem, the individual, and the group.

Nourishments

WE NOW COME to the question of "nourishments". Now tell me why these should be served to patients on soft or light diets? They take the edge off the patient's appetite and he cannot enjoy the meal itself. Nourishments are expensive. The preparation and service take time which might better be spent on other phases of diet kitchen routine. There are more dishes to wash and there is constant confusion in the diet kitchen. If money and time are spent on "nourishments", there will not be enough left for the meal. If nourishments are *necessary* for soft and light diets, then there is something wrong with the meals. And it is the three meals a day which the patient remembers as hospital food and hospital food service—not the fruit juices, bottled beverages, eggnogs, fruitades, flips, cookies, and sandwiches he received. Eliminate the money-eating and time-consuming nourishment service, spend your food money and personnel time for three good, interesting, well-cooked meals, served quickly and attractively, and carried speedily to patient, and many of your headaches over food complaints will be chased away.—*Geraghty, E. M.: Organization and Management of the Hospital Food Service—Part I, Hospitals, December, 1939.*

GETTING THE MOST OUT OF HEALTH EDUCATION TOOLS[1]

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THE knowledge of what it takes to make good nutrition does no good unless this knowledge is put into practice. This may be done in several ways. One is to keep the scientific knowledge restricted to a few carefully selected persons, who in turn direct the activities of certain other people into the proper channels. This method of putting knowledge into practice has been in use for centuries.

Among primitive peoples there has always been a reasonable amount of sound health practice. But the rules of the game were dictated by a small clan of temple guards, of healers, and of medicine-men. As a result of their greater knowledge they were spared some of the less desirable duties of the community. To retain themselves in power, they had to guard their real secrets from the common man. As a result they took a sound rule of health and built around it a maze of mystery and superstition. They invoked religious taboos as a form of quarantine. They ascribed ills to a weird supernatural power, beyond the comprehension of the ordinary man. They utilized a variety of remedies to hide the real among the false. By these methods they cajoled the people into practising the knowledge possessed by the medicine-men. But it had its weaknesses. When some brave soul dared flaunt some taboo, and got away with it, the good rules went with the bad.

As a matter of fact, it has only been within the memory of most of us that this control of knowledge and science by a select few has begun to go into the discard. As long as it continues there remain two other dangers. The knowledge, or rather the practice of good rules, is given only to those who come under the influence of the temple priests. In addition, it opens the way for false prophets. If you doubt this, merely walk down the street in this metropolis of Southern California. We have many false priests. You can have your blood pressure taken on a street corner by a charlatan. You can walk into a store of "Health Foods" and eat your way to health and a ripe old age, or so you are told. There are a myriad of so-called religions that purport to give you health. These fads, these cults on health, can thrive only because you and I and our predecessors in health work have kept the basis of our knowledge from the common man. He cannot make an intelligent selection, and the false prophet has often surpassed the real in eloquence and magic.

The other method of putting nutritional knowledge to work is to share this knowledge with everyone. To do this we must put the rôle of the temple priests and medicine-men completely behind us. If we want to educate we must make our knowledge understandable—understandable to the ordinary man. We must not

[1] Read before the General Session, American Dietetic Association, Los Angeles, August 30, 1939.

be afraid of translations of our technical knowledge that can be understood by others.

If you read into these words the implication that nutritionists still adhere to the cults and mysticism of the temple priests, do not be too disturbed. In all branches of public health, even where we stress the importance of community health education, we are having a difficult struggle to become educators rather than medicine-men.

I am working on the assumption that you, as nutritionists or dietitians, are heeding the call to leave the halls of cloistered knowledge, or this paper would not be on the program, and you would not be here at this moment. So the question is: How shall we go about this business of education?

My remarks will be limited to the field of community health education, or mass education of the adult citizen. School health education, a specialty of which I know nothing, is a field in which many of you are expert. But to achieve the maximum progress we must have adult mass education as well as school and specialized education.

Possibly the first and most telling method of making education effective is to employ a good worker for that purpose alone. Every institution or organization interested in nutrition should employ such a worker. The educator should be chosen for his knowledge and ability in the field of community education—not for his knowledge of nutrition. Your job will be to give him this knowledge, and he in turn gives it to the public so the public can understand it. That, I would say, should be your goal; but it may not be achieved immediately.

While striving for this objective, there are two alternatives. One is to utilize the services of educational and publicity personnel connected with existing organizations. Many large hospitals and other institutions maintain public relations staffs. It is to their advantage to help you spread the knowledge of nutrition. It will make easier their task of gaining patient cooperation and community support. So, if there is such a worker in the organization with which you are connected, use him. In addition, there are many health departments and private health organizations that maintain educational workers. Utilize them. You are all in the same big job and should use common machinery whenever possible.

If such facilities are not available in your community, you will have to learn to do the job yourself. Even if you can use such special service, the more familiar you are with the problems and technics of these specialists, the more easily and the more effectively can you do the job of education.

Now let us examine six of the clearly defined tools or media that are used in educational work for the masses. These are newspapers, printed matter, the spoken word from person to person, radio, exhibits, and motion pictures. To reach everyone with your information you must use not one but all of these, and you must use them over and over again. No loaf of bread, package of cigarettes, or other over-the-counter commodity was sold on one advertisement alone. It takes repetition to get results.

Some of you may be thinking that you just could not write a newspaper story, make a talk, or do any of these other things. You think, and rightly too, that

they are special tools. But certain fundamentals are easy to grasp, and all we need are fundamentals.

The question next arises, which of these tools shall we use at this particular time? Two problems must first be solved. What do you want to do, and whom do you wish to reach? It is not enough to decide that we wish to give people more knowledge of nutrition. That is too general. Rather should we decide what specific piece of action we wish to achieve. And by specific I mean something small enough, and tangible enough so that the average man can comprehend it. Take a page from the commercial advertisers. The baker has one goal in mind when he says, "Bread is the staff of life". His goal is "Eat more bread", and particularly his brand. The dairyman has but one goal, the greater consumption of milk, when he proclaims that "Milk is your best food."

Your first task then, is to pick some fundamental simple rule of nutrition that can be achieved by a relatively simple action of the common man, and decide to make this effective. It can then be followed by other simple rules of action.

Then we come to the problem: whom do we want to reach? Everyone, of course. But remember that everyone is a lot of people, who may be broken down into geographical areas, age groups, sexes, economic groups, families, and finally, just plain ordinary little human beings, each one of whose interests differ. What interests the banker may not interest his wife, his stenographer, his janitor or the janitor's wife and children. We can't reach everyone at one time, so we must determine which groups of people we want to reach with the particular message we have in mind. Probably the answer indicates that we should reach several groups individually.

Knowing what we want to accomplish, and whom we want to reach, the problem of picking the most effective tools becomes fairly simple. Again we probably will find that many tools will be more effective in putting our message across with proper repetition. Let us suppose, for example, that we believe the particular information and action we have in mind would prove most valuable to housewives of the average income level. We find that they live in a certain rough area, and that this area is served by several neighborhood newspapers, and certain women's pages of the metropolitan press. We find that a leaflet written for the tastes of these women can be distributed through a convenient branch library. We find that there are clubs and churches to which these women belong, and we can show motion pictures or give talks, or even arrange exhibits there. We find that certain hours on the radio will probably reach a good number of them. And we find that the county fair or some other exposition will draw a good number, so an exhibit will also be effective. As a result we adapt our message to these various media, but all are aimed at this particular group.

Special consideration of the different media may not be entirely out of order. Newspapers reach everyone. But everyone does not read all of the paper, and to get our message read we must have it placed in the most favorable location for us. There is general news space—a hard spot to land unless you have an event to announce. There is the sports section read by the men, and a feature story on some athlete and diet may reach

those readers. There are club pages, society pages, editorial pages, each catering to a different group. Fit your message to the spot you wish.

Then we have other printed matter, a book on nutrition for instance. But it takes time to read, money to buy or print. A variety of printed matter, designed to appeal to the interest of special groups, will go further than one document of encyclopedic proportions. There is no danger of distortion, because you are the editor. It also perpetuates, for second reference, the message that you believe is important.

The spoken word before large or small audiences is very effective, for it brings the speaker and the audience face to face. The group, particularly if not too large, is likely to be homogeneous, and interested in one approach. There is opportunity for questions and answers which guarantee the greatest interest. Such a meeting also offers an opportunity for giving out printed matter without waste. In nutritional work, meetings offer the additional opportunity to present an actual demonstration.

Radio requires a difficult technic, for here one is faced with keen competition from the entertainment field. But it reaches people who probably could not be reached in any other way. Selection of hour, station and type of program will determine in large part the type of audience attracted.

Exhibits offer a graphic medium where the public can actually see, in three dimensions, everything the exhibitor is trying to convey. If used in connection with fairs and other such gatherings a ready-made audience is assured. In addition, a capable attendant adds the value of the spoken word.

Motion pictures provide a medium of action, sound, and frequently color. They will provide a technically correct presentation, presumably, and by virtue of association with the field of entertainment will frequently be accepted where unadorned speeches may not be welcome. The wide variety of reasonably priced projectors, equipped with sound, make utilization of this tool possible as well as an essential part of any educational program.

The problem of reaching the people with your message is not solved, however, merely by determining what you want to say, to whom you want to say it, and the various media that will be utilized. We can write for the newspapers, prepare and distribute printed matter, talk, broadcast, have exhibits, and show motion pictures, but unless each tool is used each time for greatest effectiveness, your job will not be done. We have all seen certain exhibits in front of which no one stopped, exhibits that failed in their purpose.

The first and last rule, always, is simplicity. And simplicity can be secured only through adequate preparation in whatever media we employ. Furthermore, preparation should be applied carefully and conscientiously to each item, whether it is a letter in reply to an inquiry, a year's report, a newspaper release, a radio script, a talk, an exhibit or a feature length motion picture. Preparation is essential to see that the particular item being prepared will fill its proper place in the entire scope of the educational program.

The particular purpose of the item, and the particular group aimed at, must be kept to the fore. With each group we must remember what special interest

it may have in the problem under discussion. Therefore we should analyze each group. Their interest in health generally is purely personal—the waist line, the headache, or the lack of "pep." So it behooves all of us to center our approach on the smallest unit, the individual and his family, and to determine first the particular point that will interest him most.

The task of preparing material requires only one general formula all the way through. There may be small special rules for each tool, but certain general rules apply to all technics of information, despite the fact that those which follow were listed for public speaking by Richard C. Borden.

The first thing to do, is "light a fire." Create interest in the subject and stop the "ho-hum" in the mind of your public. In the newspaper this must be by words and ideas, or maybe a picture. Get under their skin. Be unusual. We are all interested in the unusual. In printed matter we may use words, ideas, pictures, and then add color, design or lay-out, without in any way submerging the importance of the idea and the words. We may use music and quick moving action in radio and motion pictures. In talks, it becomes the speaker himself, his ideas and his words. Create this interest, challenge the imagination, remembering that people are interested in other people.

Then, "build a bridge." You have aroused interest but your audience is wondering, "why bring that up." Bridge the gap from interest toward your goal. Show cause and effect and reasons why. Omit everything not essential to get your one simple fact across.

Then, get down to cases. And make your case convey a picture that your audience can comprehend. Remember that they are interested in people, primarily themselves or people they know. Let them see in clear terms what you have to say means to people, to them. And be sure the case illustrates the point in question.

Finally, ask for action. Perhaps your public is now saying, "very interesting, but what of it?" Whatever you are doing you are doing for a reason. Did you ever hear a politician conclude a speech without saying "Vote for Joe Bloaks!" Listen to the radio: "Use so-and-so's cereal, buy this, buy that, it's good for you." Perhaps the action you ask for will not be quite as simple as "buy this," but ask for it in clear, certain terms, and ask for it definitely. Don't work your public up to a fine point and then leave them all educated, but saying, "so what!"

There are special rules for special media. But don't let them worry you. If you have a problem in reaching the public, take that problem to a good newspaper man, to a good exhibit man, or a good advertising man. In all likelihood you will find that he will be very much interested in your problem and will be only too glad to offer you free advice on how to do your job effectively. There is a wealth of experience in all the fields of public information that may be used, if we only get up the courage to go to these people and say "I don't know how to do this, but this is what I want to do. How should I do it, and can you help?" The chances are that you will get real help and a firm friend for the future.

Finally, education, or health education, is needed if the people of this country are to profit to the greatest extent

from the knowledge possessed by you and other specialists in different fields. If you believe in the value of health education, education on nutrition, go on out and start educating big and little masses of people. Don't ignore the few for the many, and don't forget the many in working with the few. Spread your information. Be simple in what you have to say. Start at the beginning and don't try to get it all done at once. Know what you want to do. Know whom you want to reach. Use all methods of approach. Ask for all the help you can possibly get. And finally, keep up the work in education, because education of the masses is just as slow as any other kind of education, and even you didn't learn what you know about nutrition in a week.

Vitamin Needs of the Navy

TWO NAVY PHYSICIANS, Drs. Stutz and Weispfennig, report in *Der deutsche Militararzt* investigations on the vitamin needs of sailors made at the Baltic Sea marine station. They were unable generally to confirm the observations made by others that 50 mg. of ascorbic acid is insufficient for daily needs under conditions existing on board ship. This amount of vitamin C is sufficient for conditions on land when physical exertion is moderate. The authors found that a combination of vitamin C and B_1 was superior to the sole use of vitamin C. The most favorable results were obtained by the use of lemons. A distinct superiority of natural vitamins over artificial products was noted. Environmental factors, such as sun irradiation, play an important part in vitamin metabolism. They recommend provisionally a combined use of vitamin C and B_1 for men at sea. The utilization of high grade lemon extract is, according to the authors, very limited on board ship. Germany does not import such large quantities of lemons as would be required nor would there be room enough on board ship for the barrels of lemon extract needed. The authors recommend a haw marmalade to be made at 176 F. with oxygen control and to be consumed on bread.—*Foreign Letters, J. A. M. A., 114:675, 1940.*

EDITORIAL

THE NUTRITIONIST IN A CITY HEALTH COUNCIL[1]

When considering the opportunities for nutrition education in public health it might be well to pause long enough to ask what lies behind the need for such education. It is easy to say that poverty is the cause of malnutrition and that the solution of the problem rests in adequate relief for the poor, but poverty does not explain the malnutrition that is found in the families of the so-called "well-to-do." Not so long ago a survey of the school children of Cleveland revealed that malnutrition was much in evidence among the children living in one of the city's highest economic areas. What is the other reason, then? It is chiefly ignorance, ignorance of food values and of the relation of food to health. In a report by Stiebeling and Phipard we find that about 50 per cent of the families of low-income groups could have had adequate diets had they spent their food money more wisely.

In the city of Cleveland, the incidence of malnutrition may be on the upgrade and may reveal a very serious problem. Newspapers in the past have told the public something of the situation, but health workers for some time have seen the urgent need for relief, both economic and educational.

To give a family sufficient money to buy an adequate diet and not tell them what an adequate diet is, will not relieve the situation and is surely a short-sighted plan. Just how to advise the family as to the best way to obtain and maintain optimal health by adequate dietaries is always a vital question to any agency or organization planning to give such information. The printed page, the radio, the lecture hall, the school class-room, the school cafeteria, public and private health and welfare workers working with families, adult education classes and individual instruction by a nutritionist are some of the means employed.

In discussing opportunities for nutrition education in public health, Cleveland may be taken as a fair example. Here all agencies are members of the Welfare Federation but since there are so many agencies they are divided into groups according to their fields of work. These groups are known as councils. The Health Council is composed of all the health agencies, some of which are the Child Health Association, Family Health Association, Visiting Nurse Association, Academy of Medicine, Anti-Tuberculosis League, Board of Education, Cleveland Dental Society, County Board of Health, Division of Health, Maternal Health Association, University Public Health Nursing District, Children's Fresh Air Camp and the Central Committee on Nursing.

The Health Council is an agency of the Community Fund and like most of the Cleveland agencies in public health and welfare, shares its programs, planning and wisdom in order to stretch money and energy as far as possible and meet the greatest needs without wasting time and strength in duplicating services. Health education has always

[1] Abstract of an address by Mrs. Alice H. Smith, Nutritionist, Cleveland Health Council, presented before the 1939 annual meeting of the Ohio Dietetic Association.

been one of the projects of the Health Council and in 1938 the Health Education Committee urged the need for nutrition education and the employment of a nutritionist in greater Cleveland.

With one person to do the work the question to be answered was: how can the greatest number of people be benefited? The public health nursing agencies seemed to be the logical starting point. The combined staff of the Visiting Nurse Association and the City Division of Health employs nearly 200 nurses. One of the organizations makes 500 home calls daily. The other group conducts 13 well-baby clinics in the city, each station having from two to five clinics weekly with an average attendance of about thirty mothers, and 14 county well-baby clinics. In addition, this group, with the physicians, is responsible for the health education work that is done in the parochial schools in the city. Nutrition classes held in the district offices comprise groups small enough so that the nurses have an opportunity to present the food and nutrition problems they are meeting in the districts. The material presented to the nurses is planned so that it may be readily available. In other words, they learn just what an adequate diet consists of in terms of common foods, why it is adequate, its relation to health, and what it costs, or perhaps equally important, what part of a family's income it represents.

Special emphasis has been placed on the fact that the entire family needs and should have the same diet qualitatively, the differences being quantitative. In order that the nutrition teaching may have real value and meaning for the nurses, they have been taught to check the adequacy of their own food intakes and the status of their nutrition. In addition, they have collected food prices and compiled market orders for the families in their districts, and planned a week's menu from these market orders.

Obviously, the aim is not to make nutritionists out of public health nurses, but rather to equip them with the right kind of information so that when they walk into homes and find children on bread and coffee diets, they are in a position to give the much needed help and suggestions for good food intakes, and be able to interpret the same in terms of good health. As a consultant, the public health nutritionist can render valuable assistance to other agencies. An example is the service rendered by the Cleveland Health Council nutritionist to the Anti-Tuberculosis League in the compiling of costs of care for tuberculous families. In doing this they need to know what an adequate diet for such families consists of and what it would cost. This information should come from one qualified to make such an estimate.

The public health nutritionist is also qualified to estimate the needs of persons on special diets and to teach how to adapt and adjust them, when necessary, to low incomes. Another opportunity is that of providing a place for the training of future public health nutritionists. In Cleveland the student dietitians from the University Hospitals and home economists enrolled in the graduate school of Applied Social Sciences at Western Reserve University have an affiliation with the nutritionists in the public health field. This seems to be a most legitimate affiliation, offering insight into a field practically unknown to

the young college graduate so that she may determine whether she is fitted to pursue such work.

Directors of camps and institutions have become very much interested in the health of those they enroll and are cognizant of the rôle nutrition plays in maintaining health. The settlement house represents another group where the public health nutritionist might make a valuable contribution. In one of the poorest economic areas in Cleveland, the Tremont area, where 15,000 people, including 6000 boys and girls, live in very crowded quarters, classes meet weekly for a demonstration food and nutrition lecture. These classes are conducted by home-makers and supervised by the Health Council nutritionist. Four different groups are being taught, two more are in session, and two in other sections of the city at present.

In the fall of 1938, the home-makers division of the Cleveland Home Economics Association asked the Health Council nutritionist to talk to them on "what's new in foods and nutrition". At the conclusion there was a request for a "refresher" course in nutrition. Such a course was arranged and eight members of the group attended and completed the series and now serve as volunteer workers. This was followed by a second class of 20 who also now serve as volunteers.

Some of the other activities in which city nutritionists may participate are in connection with national Child Health Day, nutrition teaching to pregnant women, attending prenatal clinics and helping children in nursery schools to form good health habits. Another obligation of the nutritionist is to attend the lectures of some of the popular food faddists, for if we hear their stories we are better fitted to combat these by presenting sound information "as effectively as the food faddist sets forth his dubious claims".

TRENDS IN FOOD CONSUMPTION

The years since the beginning of the World War have seen many upheavals in tastes, habits, dress, living conditions and other phases of man's existence. Women took the place of men who went to war and ever since large numbers have sought gainful occupations outside the home. Thus increasing numbers of restaurants now serve those who formerly ate at home or carried a lunch. According to the *Encyclopedia Britannica*[1]:

> Numerous factors have influenced the trend from individual to group food service. Some of these factors have been women in business, smaller families, shortage of servants, the general public's increased earning power, and demand for more leisure. . . .Before the World War, both factory and office employees carried home-made lunches. In 1928 this was rarely done. . . .Simultaneously the character of the food service underwent considerable change. About 60 per cent of the patrons of these group establishments are women —who are light eaters.

Partly due, perhaps, to the food tastes of this army of women workers, but mostly due to the focusing of the public attention on the newer knowledge of

[1] Volume 9, 14th edition, as cited by Evelyn Rietze, Dietitian and Director of Foods Department, School Lunches, Louisville, Kentucky, in an address before the National School Cafeteria Association, Louisville.

nutrition, and the attendant education of the consumer, the eating habits of the public were reflected in decreased consumption of certain foods and an increase in others. Other factors that appear to have influenced food consumption trends are the change from the billowy to the willowy in women's figures and the increasing tempo of modern life with the resultant demand for what Miss Rietze terms the "quick, pick-up type of lunch." This demand has been reflected in a 215 per cent increase (since 1917) in the consumption of sandwiches. The decreased consumption of pastry, 26 per cent, white bread 29 per cent, and potatoes 15 per cent, is doubtless largely due to the craze for reducing. The following increases (since 1917): salads, 110 per cent; milk (malted), 63 per cent; milk (whole), 62 per cent; fresh fruit, 39 per cent; canned fruit, 33 per cent; whole wheat bread and rolls, 35 per cent; fresh vegetables, 35 per cent; canned vegetables, 30 per cent; cheese, 40 per cent; fish, 33 per cent; and eggs, 11 per cent, may almost wholly be attributed to greater awareness of the essential place of the protective foods in good nutrition. These last mentioned changes in food tastes may very properly be attributed to the influence of the teachings of the dietitian and nutritionist and the carry-over of these teachings into advertising copy and popular writings.

But as Miss Rietze has remarked, all this would not have come about without improved methods of transportation, modern refrigeration and newer and superior methods of canning and preserving.

Among these forceful factors in today's surge toward the more perfect life, nutritionally and physically, is the process of education of the child, beginning in the home and continuing in the school by means of the school lunch. For here, in thousands of schools, millions of children are fed. And while the noonday meal will not alone solve the problem "yet it is extremely difficult to feed children properly without an adequate noon meal"[2]. Thus this group of trained dietitians and nutritionists in charge of the feeding of the school child will have an ever-increasing effect upon the changing trends of America's food tastes and appetites. Not only is their work having a direct effect as seen in the improved nutrition of the school child, but more important, and over a long range, this work will be reflected in the better food habits of these children, grown to adulthood, and in turn on their children. Of all activities open to the trained dietitian and nutritionist, perhaps such work offers the greatest challenge for a purposeful career.

CANCER CONTROL: EARLY IS THE WORD

Cancer is a curious foe. Second only to heart trouble as a killer and most feared of all causes of death, cancer in its early stages is one of the most curable of serious diseases. Its definite diagnosis requires the services of a highly trained pathologist, but early symptoms which may mean the disease is present are easily recognized by any alert individual. Once cancer is diagnosed the preferred treatment is by a group of

[2] Bryan, M. deG.: The School Cafeteria—An Opportunity for Dietitians, J. Am. Dietet. A., 14: 97, 1937.

specialists and yet the key man in the whole picture of cancer control is the general practitioner to whom patients come for periodic examinations or for advice about apparently harmless conditions. While late cancer causes considerable suffering, in the early stages it is nearly always painless.

It is fitting that this paradoxical disease should be fought by an army, not chiefly of men but of women, an army not of destruction but of education, and its war should be a war to save life. Four years ago a small group of physicians, research workers, and club women launched the Women's Field Army of the American Society for the Control of Cancer. Its goal was to reduce cancer mortality and to arouse the interest of men and women everywhere in this disease and the methods and facilities available in their communities for treating and controlling it. Between one-third and one-half of those who now die could and should be saved by early diagnosis and prompt treatment, states Clarence C. Little, managing director of the Society, in connection with the fourth annual cancer campaign to be conducted this April.

A beginning has been made, but only a beginning in this peacetime war. Approximately 150,000 men, women and children were destroyed by cancer in 1939. The Field Army suggests three measures that each one may adopt and so play a part in cancer control: (1) Have a comprehensive physical examination once a year, however well one feels. Women over thirty-five years of age should have what the Society calls the "B. P. Examination", covering the breast and pelvic areas, semiannually. (2) Memorize the cancer danger signals, early and usually painless symptoms that may mean the disease is present and should always mean a visit to a physician. They are: any persistent lump or thickening, particularly in the breast; any irregular bleeding or discharge from any body opening; any persistent and unexplained indigestion; any sore that does not heal normally, especially about the tongue, mouth or lips; any sudden change in the form or rate of growth of a mole or wart. (3) Enlist in the Women's Field Army in April, set aside by Special Act of Congress as Cancer Control Month, and so help to carry on its work of education to save lives. Educate, save, enlist, are the watchwords in the war against this disease. One more word should be emphasized. It appears repeatedly in this editorial. The word is "early", and *Early is the Watchword in Cancer Control.*

CURRENT COMMENT

ORIENTING THE PROSPECTIVE DIETITIAN

MARTHA S. PITTMAN

In 1934, a Dietetic and Institutional Management Committee was established in the Division of Home Economics at Kansas State College. The committee consists of five members chosen from the departments most immediately concerned with the training for these professions. One member represents the office of the Dean of Home Economics, and two each are appointed from

the Departments of Institutional Management, and Food Economics and Nutrition. The personnel of the committee is fairly permanent as familiarity with the work is believed to promote efficiency. Meetings are held regularly once each week.

The duties of the committee are many and varied. Working individually, the members act as advisers for dietetic and institutional majors from the time the latter declare their interest in these fields, which is usually in the sophomore year. They are thus guided in their choice of electives. Frequently, students who appear to be in the wrong place are directed into other channels better suited to their capabilities. The aim is to become personally acquainted with each student early in her college career and to know her from as many angles as possible. This is believed to aid in placing the young women to advantage. With this same end in view, members of the committee visit as many of the hospital and administrative courses approved by the American Dietetic Association as opportunity permits. By making the acquaintance of the dietitians in charge and knowing something of the physical plant and the living conditions offered, it is believed that the type of student preferred in a given place may be better judged and as a result, misfits will be fewer.

A file of the hospital courses offering dietetic training and the non-hospital administration courses is maintained and is available to students. A student record file is also provided for the benefit of the committee and the college in general. This contains a folder for each student which at the time of her graduation includes a personal data sheet, a photograph, and copies of her recommendations. This record is kept up to date after the student leaves college, her card showing when she completed her training, the positions she has held, and reports of her work in training and on the job. It is part of the student's responsibility to keep the committee informed of her whereabouts after she leaves college. When she retires from active work, her folder is placed in the inactive file. Thus a permanent record of students in these fields is being built up. Certain persons in this file are marked for advancement and are recommended as opportunities arise.

In the fall semester, senior majors are invited to a tea sponsored by the committee. At this meeting, the work of the hospital and non-hospital dietitian is discussed and the list, approved by the American Dietetic Association, is made available. The mechanics of making an application are also explained and questions are answered.

After this meeting, which just precedes the holidays and permits a conference of the student with parents, each student makes three choices for training from the approved list and presents these arranged in order of preference. One stipulation is that a student may apply only at a place she is willing to accept if offered to her. The committee then passes on these requests, suggesting changes if necessary but following the desires of the student where possible. At most, only two applications are sent out for each individual in this first attempt at placement. The credentials are assembled and mailed by the chairman of this committee and a personal letter of application is sent by the stu-

dent. Any applicant who fails to receive an appointment as a result of this first effort is given further aid until she is placed.

Another duty of the committee is to present the possibilities in the fields of dietetics and institution management to sophomore and transfer students to aid them in the choice of a profession.

Credentials are furnished upon the request of former students who desire new positions, and recommendations are made for positions from the list of available graduates in the file. Thus a placement bureau is maintained.

After six years the committee apparently more than justifies its existence; it is believed to warrant continuance and some expansion.

MINIMUM QUALIFICATIONS FOR HOME ECONOMISTS IN SOCIAL WELFARE AGENCIES[1]

In 1937 a joint committee, appointed by the American Dietetic Association and the American Home Economics Association, prepared a tentative outline of minimum qualifications for nutritionists employed by public and private health and welfare agencies. This report was published by both associations in November 1937.

Since this report appeared, there has seemed to be a growing need among employers in these two types of agencies for more specific information to guide them in selecting applicants best qualified for the kind of service to be rendered. Consequently the joint committee is now presenting to the members of the two associations their tentative report on "Minimum Qualifications for Home Economists in Social Welfare Agencies". The report also outlines customary duties and responsibilities of this branch of social service. The report has been officially approved by the Executive Committee of the American Home Economics Association after having been submitted to a number of public and private social agencies for criticism. The committee hopes it will be helpful not only to employers, but also to those interested in preparing themselves for this profession, and to heads of university home economics and social science departments.

The committee is now working on a similar report dealing with the qualifications and responsibilities of nutritionists in public and private health agencies. When this has been approved by the Executive Board of the American Dietetic Association, it will be published jointly by both associations.

The following constitutes the "Tentative Report on Minimum Qualifications for Home Economists and Home Economics Consultants on Standards of Assistance in Social Welfare Agencies" as formulated by the following committee: Bodil Fenger, home economist, Family Service, St. Paul; Martha Koehne, nutritionist, Department of Health, State of Ohio, Columbus; Sue E. Sadow, home economist, Department of Welfare, City of New York; Alice H. Smith, nutritionist, Cleveland Health Council, Cleveland; and Helen A. Hunscher, professor of Home Economics, Western Reserve University, Cleveland, chairman.

I. *Definition*

The Home Economist in a social welfare agency is a qualified, professionally trained person who directs or

[1] Approved by the Executive Board, American Dietetic Association, March 2, 1940.

carries on those activities of the agency that relate to the maintenance of the homes of families. She is responsible to the director of the agency and carries on her activities through the integrated field staff. The work of the Home Economist in social welfare agencies varies with the size and nature of the agency. The general functions of the Home Economist or the Home Economics Consultant are several:

A. To formulate standards for use in determining need for assistance.
B. To improve and revise these standards in the light of accumulating experience and new information.
C. To formulate guides for evaluating economic resources of families applying for assistance and/or service.
D. To give consultation service to staffs engaged in putting these standards and evaluations into practice in relation to the total needs of the families.
E. To direct or carry on educational activities through which the assistance given by the agency may be effective in maintaining the health and adequate standard of living of families or individuals.

II. *The functions of the Home Economist or Home Economics Consultant include:*

A. Developing basic standards for the kinds and amounts of goods and services needed by families and individuals of different ages, conditions and activities. Some of the major items are: food, shelter, fuel, light, transportation, household equipment and supplies, insurance, clothing and personal upkeep, health, church, education, recreation, etc.
B. Collecting current prices for all budget items in local or representative communities.
C. Establishing the cost of requirements of families and individuals by relating prevailing prices to the basic standards which have been adopted for the kinds and amounts of goods and services accepted as necessary for the health and welfare of families and individuals.
D. Developing and supervising the use of procedures to be employed in evaluating economic resources of applicants for assistance; and in adjusting and utilizing these resources in relation to the agency's adopted standards of assistance.
E. Preparing forms for obtaining and recording factual data in relation to needs and resources of applicants.
F. Evaluating or adjusting the allowance schedules in accordance with the prices which are collected regularly and with the agency's standards of assistance.
G. Interpreting to the community: the basic standards for the kinds and amounts of goods and services needed by families and individuals; and the standards of assistance of the agency.
H. Participating in the in-service training of staff members by interpreting: basic standards and the use of standards of assistance in working out individual family budgets; and material that will aid families in making the best use of allowances and resources.
I. Consulting with staff members and/or families on problems of family economics, home management, clothing needs, marketing, food preparation and nutrition.
J. Preparing and assembling educational material for the use of the staff and clients.
K. Cooperating with agencies and groups in the community whose programs relate to the welfare of families in the community, such as

health, social and educational agencies as well as lay and professional groups.

III. *Minimum Qualifications*

A. For Home Economist or Home Economics Consultant in a large social welfare agency (public or private), the following education and experience requirements must be fulfilled:

1. Education
   a. B.A. or B.S. degree in home economics (½ the course credits in home economics) with a major in economic and social aspects of family life; and/or foods and nutrition, and/or home management. The course content should include food preparation and marketing, clothing, budgeting and family economics, home management, and nutrition.
   b. Satisfactory completion of the equivalent of at least one year of full-time postgraduate academic credit in (1) family economics and social aspects of family life and/or foods and nutrition and/or home management with courses in applied (family or community) sociology, psychology, economics, and legal, medical and economic aspects of social work, including either (2) or (3) as follows: (2) supervised field work in an accredited school of social work; (3) supervised field experience in a social welfare agency under the direction of a graduate case worker and Home Economist.
2. Experience
   a. A minimum of four years as a paid Home Economist or Home Economics Consultant to a professional staff in public or private social welfare agencies with recognized standards. The experience should have offered opportunity to develop budgetary standards and procedures for the use of the agencies. It should include experience involved in dealing with technical problems of analysis, evaluation, adjustment and conservation of economic resources of families with small incomes.
   b. Experience in specialized related fields which may be substituted in the foregoing (III, A, 2 a). Where a person with the experience described cannot be found, the candidate may substitute for not more than two of the required four years' experience set forth (in III, A, 2 a), 2 years' full-time paid professional experience for each 1 year lacking in the experience described (in III, A, 2 a), from one or more of the following: (1) social case work in public or private social welfare agency with recognized standards of work; (2) worker in Farm Security Administration as regional chief of home economics, associate state director of home economics, district home management supervisor, or county home management supervisor; (3) dietitian or nutritionist in food clinic or nutrition consultant in health agencies; (4) teacher of home economics in high school, college, or adult education programs; *or* (5) home economics extension worker conducting adult edu-

cation programs in food, clothing, home management and budgeting.

3. Personal Qualifications
   a. Good health and vitality with emotional stability and poise.
   b. Executive and organizing ability.
   c. Ability to gain confidence and cooperation of fellow workers and the public.
   d. Skill in analysis of situations and in presentation of material.
   e. Understanding and tolerance.
   f. Imagination, initiative, and resourcefulness.

B. For the Assistant Home Economist or Assistant Home Economics Consultant, the following education and experience requirements must be fulfilled:
   1. Education
      a. B.S. or B.A. degree as outlined under (III, A, 1 a).
      b. Satisfactory completion of the equivalent of at least one-half year of postgraduate academic credit as outlined under (III, A, 1 b).
   2. Experience
      a. A minimum of 2 years as a paid staff Home Economist or Home Economics Consultant.
      b. Where a person with the described experience cannot be found the candidate may substitute for not more than one of the required two years' experience described above, 2 years' full-time paid professional experience from one or more of the positions described under (III, A, 2 b).
   3. Personal Qualifications
      a. Same as (III, A, 3) except that the candidate may have had less opportunity to develop administrative skill. She should show potential administrative ability.

C. Staff Home Economist or Staff Home Economics Consultant
   1. Education
      a. B.S. or B.A. degree as outlined in (III, A, 1 a). Some opportunity for supervised field work in a welfare agency under a Home Economist is desirable.
      b. If the applicant is to work as the only Home Economist in an agency, postgraduate training as outlined under (III, A, 1 b) is desirable. One year of supervised field experience in a social welfare agency under the direction of a graduate case worker and Home Economist is required.
      c. If the applicant is not the only Home Economist in an agency, the agency should be prepared to give systematic in-service home economics training to appointees, qualifying only under (III, C, 1 a) without supervised field work.
   2. Personal Qualifications
      a. Same as (III, A, 3) except that the candidate may have had little opportunity to develop administrative skill. She should show potential administrative ability.

IV. *Salaries and ranks* shall be commensurate with that of other department workers of comparable training and responsibility.

BOOK REVIEWS

A Treatise on Baking. By Julius E. Wihlfahrt and Robert W. Brooks. Published by Fleischmann's Yeast Division of Standard Brands Inc., N. Y., pp. 468. Price $1.00.

This is a compendium of all that large scale bakers need to know about the production of bread and yeast-raised sweet goods. Published originally in 1927, its popularity has been such that it is now in its third edition. It has been considered as a text-book by the baking industry since its publication. Opening with a brief history of the baking industry, this treatise is divided into two parts: (1) Bakery Technology, a thorough explanation of ingredients and baking procedure; and (2) Recipes and Methods, covering the making of quality breads, rolls and yeast-raised sweet doughs. This section contains 182 recipes including such unusual products as raisin egg bread, Japanese rolls, orange rolls, as well as the standard breads, Parker House rolls and others.

Of special interest is the section on bread faults, their cause and how to correct them. A complete index makes all the information contained in the book quickly available.—NELL CLAUSEN, *Milwaukee Children's Hospital, Wisconsin.*

A Treatise on Cake Making. Published by Fleischmann's Yeast Division of Standard Brands Inc., N. Y., pp. 468. Price $1.00.

What *A Treatise on Baking* does for the large scale baker of bread and yeast-raised sweet goods, *A Treatise on Cake Making* does for the cake baker. It covers: (1) Basic Ingredients, the technology of cake making, dealing with the materials used in producing quality cakes; (2) Cake Making, explaining how to produce quality cakes, and how to overcome production faults; and (3) Formulas and Methods, with fillings and icings. Practically two-thirds of the book is devoted to scores of recipes for cakes, cookies, biscuits, fillings and icings.

In addition to a scientific discussion of cake-making problems, the text contains an illustrated section on "shop" layout.

An extensive index makes all information in this book quickly and easily available.—NELL CLAUSEN, *Milwaukee Children's Hospital, Wisconsin.*

School Health Problems. By Laurence B. Chenoweth, A.B., M.D., and Theodore K. Selkirk, A.B., M.D. Second edition. New York: F. S. Crofts & Co., 1940, pp. 419. Price $3.00.

The authors, Laurence B. Chenoweth and Theodore K. Selkirk, are well qualified both as doctors and teachers to understand the nature of the health problems in schools and to prescribe for them. They have set as their goal "to develop health consciousness among teachers and pupils to as great an extent as possible." They have weeded out the theoretical and highly technical material and have combined their practical experience as school health workers and the latest medical and educational data. The result is a workable handbook on the subject of school health. There are a number of references for more detailed study of any phase of the problems.

The general laws of growth in children are discussed, and the social, hereditary, economic, seasonal, dietary, racial, and physical conditions which influence health. These factors are broken down into their various components and discussed in detail, from the point of view of how they can be detected and alleviated. Methods of control of physical defects and diseases are suggested. The educational responsibilities of the school administrators and teachers are emphasized. Their duty in seeing that the lighting and acoustics are optimum and that special classes are provided for children with speech, hearing, seeing, and other physical defects, is clearly indicated. The rôle of physical and mental health education is shown to be vital, and one that can be carried out successfully only by the combined efforts of the school administration.

The book is a comprehensive study of the situation that exists in our schools today. There is enough medical information given to make intelligible the problems with which we are faced in regard to the various common and communicable diseases of children. The newest and most approved tests for determining the extent of physical defects are explained, and indications are given whereby the school can become an integral force in building up the health of the child and indirectly the health of

the general public.—CONSTANCE C. HART, *Director, Department of School Lunchrooms, Board of Education, Rochester, New York.*

Malnutrition in South Africa. By Ellen M. Radloff, B.Sc., Hons. (Lond), Ph.D. (Yale), and T. W. B. Osborn, D.Phil. (Oxon.), D.Sc. (Rand), L.R.C.P., M.R.C.S. Lecturers in the Department of Physiology, University of the Witwatersrand, Johannesburg. Johannesburg: The Witwatersrand University Press, 1939, pp. 34. Price 2 shillings.

The authors believe that the words investigation and research have too often soothed departments of state into inactivity. "It is to be hoped that the nutrition survey will not be allowed to silence the humanitarian demand for immediate action." It is felt there is ample justification for making immediate plans to alleviate this national evil, and the authors consider that these plans should be "more realistic than the supplying of extra milk to a few thousand school children, and more expeditious than the schemes to improve the economic welfare of the impoverished classes." Without doubt the ideal way to feed the country adequately is to educate everybody to know which are the protective foods, to grow enough of these foods for everybody, and to make everybody rich enough to buy them.

In the meantime and after a consideration of the serious dietary deficiencies present among the poorer sections of the European population, the natives, and also the more affluent members of the community, they suggest possible immediate procedures. One urgent need is for analyses of South African foodstuffs. At present, figures used in the analyses of diets are almost exclusively those determined in Europe and America. Realizing that since the ideal way to deal with the whole problem is through improvement in economic conditions and education, the authors suggest a "pharmacological attack" upon subnutrition through supplying calcium and vitamins A, C, D, and the B complex, as dietary supplements. These factors in concentrate form, the authors feel, should be as readily available as quinine, for instance, in combating malaria. "If malnutrition were a more spectacular disease no one would have qualms about using direct measures against it."

Other suggestions made by the authors concern minor and practical additions to the, at present, excessively simple and restricted diet of the populace. Instead of "boer meal and black coffee for the whites, or mealie meal and a dead sheep once a month for the natives," greater use of the soy bean, potatoes and peanuts could be encouraged, but as the authors conclude: "It is easy for dieticians, using the cumulative experience of hundreds of research workers, to say what the country needs; it is far from easy for the administrations, running the gauntlet of opposing economic and political interests, to give what is prescribed."

Your Child and Diet. By Cyril V. Pink, M.R.C.S., L.R.C.P. New York: Chemical Publishing Co. Inc., 1939, pp. 141. Price $1.50.

There is much that is sound and much that is silly in this book. One cannot take issue with the first chapter, "Nurse Your Baby If You Can", nor with the instructions contained therein, but many of the dietary theories that follow, based largely on the Bircher-Benner vegetarian school of thought, must be taken with several grains of salt.

For the nursing mother, Mr. Pink advocates that half the day's food be taken uncooked, that meat and fish are best excluded, that milk, butter, cheese, eggs, and bread and other cereals be taken only in moderation, and that foods be taken in the "natural state" and consist chiefly of fruit, salad and vegetables.

CURRENT LITERATURE

American Journal of Digestive Diseases

Vol. 7, January 1940

*Desiccated hog's stomach extract (Ventriculin) in the treatment of atrophic gastritis. L. Schiff and S. Goodman.—p. 14.

*The vitamin B complex and its constituents in functional digestive disturbances. F. F. Chesley, J. Dunbar and L. A. Crandall.—p. 24.

*Peptic ulcer treated by posterior pituitary preparations. Clinical and experimental observations. M. H. Metz and R. W. Lackey.—p. 27.

Clinical results from the continuous intra-gastric drip using aluminum hydroxide in the treatment of peptic ulcer. J. T. Eads.—p. 32.

VENTRICULIN IN ATROPHIC GASTRITIS. Case histories are presented of 5 patients with chronic atrophic gastritis not associated with other gastric disease, pernicious anemia, or other anemia, protein deficiency, or obvious vitamin deficiency. Patients were given hog's stomach extract, ventriculin, in doses averaging 30 to 60 gm. daily in addition to a bland or regular diet. All showed marked symptomatic improvement with disappearance of atrophic changes. Results suggest that atrophic gastritis may be due to a deficiency of a substance contained in desiccated hog's stomach extract.

VITAMIN B IN DIGESTIVE DISTURBANCES. A high percentage of patients with functional digestive disturbances are improved by the administration of a vitamin B complex concentrate in large doses. That these patients are deficient in the vitamin B complex is suggested not only by the results of therapy, but also by the demonstration of an abnormally low excretion of thiamin. Preliminary tests indicate that effectiveness of the whole complex is not due to thiamin or to riboflavin. Part of the effectiveness is due to nicotinic acid.

PEPTIC ULCER. Satisfactory clinical results are reported in 67 of 76 cases of peptic ulcer treated with posterior pituitary preparations. Neither a strict dietary régime nor other medication was employed and the patients remained ambulatory. Posterior pituitary preparations should be considered complementary to the accepted principles of peptic ulcer management. The theoretical basis for the use of pituitrin is discussed.

American Journal of Diseases of Children

Vol. 59, January 1940

*Dietary and metabolic studies of Eskimo children with and without dental caries, including studies of the metabolic balances of calcium, phosphorus and nitrogen. E. H. Siegel, L. M. Waugh and M. Karshan.—p. 19.

*Biochemical studies of the saliva of Eskimos correlated with dental caries and the occurrence of salivary calculus. M. Karshan, E. H. Siegel and L. M. Waugh.—p. 39.

Growth, development and care of the child. H. Bakwin and R. M. Bakwin.—p. 112.

*Lipodystrophy: Report of a case, with metabolic studies. J. S. Harris and R. Reiser.—p. 143.

DIET AND METABOLISM OF ESKIMOS. In the balance experiments performed on Eskimo children for 2 to 4 days in three different settlements of Alaska, no correlation was found between the retentions of calcium, phosphorus or nitrogen and the presence or absence of dental caries. Data suggest that there is no basis for the view frequently held that the freedom from caries enjoyed by a primitive people is due to a nutritional superiority of "natural" as compared with "civilized" diets.

SALIVA OF ESKIMOS. In a study of stimulated and unstimulated saliva of Eskimos, higher mean values for total calcium, inorganic phosphate and carbon dioxide capacity were found in a caries-free group than in a group with caries. The mean values for total calcium, inorganic phosphate and carbon dioxide capacity were somewhat lower in a calculus-free group than in a group with varying amounts of calculus. There is no correlation between the carbon dioxide capacity of saliva and the acid-base balance of the diet.

LIPODYSTROPHY. The metabolism of a patient with progressive lipodystrophy has been studied and compared with that of 2 normal children. The patient with lipodystrophy showed normal absorption of fat, deficient oxidation of fat as compared with the controls, an abnormal increase in the serum fats after a fat meal, a lowered dextrose tolerance and an abnormal creatinuria.

American Journal of Public Health

Vol. 30, January 1940

The national health program—Present status. A. Wolman.—p. 1.
*School health education. W. H. Brown.—p. 35.

SCHOOL HEALTH EDUCATION. A summary by the chairman of the School Health Education Section of the Health Education Symposium of the Western Branch of the American Public Health Association gives the concept and development of school health education, the objectives and components of school health education, the part that physical education plays in the school health program and the needs emerging from the group discussions.

American Journal of the Medical Sciences

Vol. 199, January 1940

*A simplified method for calculating diabetic diets. R. Richardson.—p. 102.

DIABETIC DIETS. A plan for calculating diabetic diets is given. Substitutes for oatmeal, butter and for a slice of bread are given. Seven diets are outlined in detail.

Archives of Pediatrics

Vol. 57, January 1940

*The raw apple diet therapy of diarrhea. A. Kershbaum.—p. 43.

RAW APPLE DIET IN DIARRHEA. Twenty cases are presented in which the effect of treating diarrhea in children with raw apple is compared with the effect obtained by the alkalinized sugarless milk feeding method. The period of recovery is much shorter with the scraped raw apple treatment. Scraped raw apple is a safe, economical, easily administered and effective treatment for diarrhea of enteral and parenteral origin.

Canadian Medical Journal

Vol. 42, January 1940

*The nutrition of the army. Editorial comment.—p. 75.

NUTRITION OF THE ARMY. The present ration of the Canadian Army does not furnish in adequate amounts many foods that are most desirable. More milk, fresh fruits and vegetables are needed from the nutritional, palatability and economic standpoints. The army cook has a great responsibility in controlling large and valuable supplies and preventing waste. Many improvements can be made with no increase in cost over the present system.

Child

Vol. 4, January 1940

*The significance of child-labor day. K. F. Lenroot.—p. 173.
*Mortality among children in a southern state during the first 5 years of life. J. M. Saunders and R. R. Puffer.—p. 177.

CHILD LABOR DAY. The hope and determination of parents that their children have a better chance than they had motivates thought and action along many lines in the United States. Today there are still children working under harmful conditions in local industries; in agriculture, domestic service and street trades. Accompanying charts show how the ranks of the child laborers have thinned and the ranks of the high-school pupils have multiplied in the past 30 years.

MORTALITY DURING FIRST FIVE YEARS. An analysis of mortality among children under 5 years of age is presented to indicate those deaths which are preventable with knowledge already available and to indicate where concentrated effort is needed to reduce deaths in this age group.

Hygeia

Vol. 18, January 1940

*Public malady number one. L. M. Miller.—p. 8.
*Dried fruits.—p. 59.
*Oysters. J. F. Edwards.—p. 62.

PUBLIC MALADY NUMBER ONE. There is no evidence that a good diet, cod liver oil, or vitamin pills, or the fad of ultraviolet radiation, or bare legs, or cold baths will themselves prevent a cold. Keeping in good condition does help to lessen discomfort and prevent complications but it does not prevent colds. The common cold is caused by a filterable virus. Vaccines against colds are not very successful. If one wishes to prevent colds he must go into solitary confinement and boil everything or sign up with Admiral Byrd. Medications do not seem to shorten the life of a cold.

DRIED FRUITS. Fruits are dried by exposure to the sun or in specially constructed dehydra-

tors. Some fruits, such as apricots and peaches, are exposed to the fumes of sulfur dioxide before drying to prevent discoloration. Other fruits, such as prunes and figs, are dipped in lye before drying to tenderize the skin and facilitate the drying process. Water sprays remove most of the lye and sulfur residues after the fruit is dried. The composition of dried fruits is given in table form. Cocoanut contains 40% fat. Figs contain more fiber than any other dried fruit. Prunes have a laxative effect due to a water soluble agent in the fruit. Properly dried fruits contain practically all the nutrients natural to the fresh fruit except vitamin C. The accepted brands of dried fruits are listed.

OYSTERS. The life story of that strange little bivalve of the sea is presented, together with tempting recipes for serving oysters.

Journal of Biological Chemistry

Vol. 132, January 1940

*Deficiency of vitamin B_1 in man as determined by the blood cocarboxylase. R. Goodhart and H. M. Sinclair.—p. 11.

*The B vitamins and fat metabolism. III. The effects of vitamin B_6 upon liver and body fat. G. Gavin and E. W. McHenry.—p. 41.

*The relation of vitamin B_6 and pantothenic acid to factor W studies. S. Black, D. V. Frost and C. A. Elvehjem.—p. 65.

*Inheritance effect of exercise on the phospholipid and cholesterol content of muscle. W. R. Bloor.—p. 77.

*Studies on colloidal sulfur-polysulfide mixture. Absorption and oxidation after oral administration. H. Greengard and J. R. Woolley.—p. 83.

Molecular weight of egg albumin. F. W. Bernhart.—p. 189.

*Studies on the metabolism of creatine and creatinine. III. Formation of creatine by isolated rat tissues. Z. Baker and B. F. Miller.—p. 233.

*The biochemical behavior of lead. I. Influence of calcium, phosphorus, and vitamin D on lead in blood and bone. A. E. Sobel, H. Yuska, D. D. Peters and B. Kramer.—p. 239.

VITAMIN B_1 DEFICIENCY. The amount of cocarboxylase in blood varies directly with the amount of total vitamin B_1 and with the degree of saturation of the tissues with the vitamin. There is an etiological relationship between deficiency of vitamin B_1 and alcoholic neuritis, nutritional neuritis and some cardiovascular disturbances. Deficiency of vitamin B_1 is associated with cases of anemia, of subacute combined degeneration of the cord, and of certain psychiatric disorders. Diminished gastric acidity tends to be associated with deficiency of vitamin B_1. Vitamin deficiencies in man are almost always multiple and are therefore usually inadequately treated by administration of a single pure vitamin.

VITAMIN B COMPLEX AND FAT METABOLISM. The administration of vitamin B_6 in conjunction with thiamin, riboflavin, and choline causes a slight increase in body fat and an increase in body weight in rats given a fat-free diet. Nicotinic acid slightly augments the effect of vitamin B_6 upon body fat but not upon body weight. Neither vitamin B_6, nicotinic acid, nor riboflavin will prevent the deposition of fat in the liver which results when thiamin is administered. The amount of liver fat is normal if choline is administered, either alone or in combination with any of the above factors.

FACTOR W. The factor W assay ration previously used is deficient in vitamin B_6. Significant growth responses are obtained when synthetic vitamin B_6 is added to the basal ration plus factor W concentrates. All factor W preparations which promote normal rat growth contain significant amounts of pantothenic acid. A procedure for the preparation of highly purified factor W concentrates is described.

LIPIDS AND ACTIVITY IN MUSCLE. Muscles of rats exercised through the second and third generation show, in addition to hypertrophy, large increases in phospholipid and especially in cholesterol. These results are favorable to the idea that exercise through several generations may result in increased phospholipid and cholesterol content of muscle.

COLLOIDAL SULFUR. Orally administered colloidal sulfur in doses of 500 to 750 mg. is completely absorbed, oxidized, and excreted in the urine as sulfate within 2 hours.

CREATINE AND CREATININE. The formation of creatine by isolated rat tissues without added substrate has been studied. Kidney produced 4 to 8 mg. per 100 gm., and liver 1.2 to 3.2 mg. per 100 gm. in a 4-hour incubation period. The process of creatine formation is apparently enzymatic in nature.

LEAD. Calcium, phosphorus, and vitamin D must all be considered in the biochemical be-

havior of lead. Lead deposition is directed by a system of its own, which is governed by the same laws as is calcium deposition but does not necessarily go in the same direction. The effect of calcium on the deposition of lead is essentially competitive, tending to remove phosphorus available for lead deposition.

Journal of Clinical Investigation

Vol. 19, January 1940

*The decrease of gastric secretion with advancing years: Further observations. A. L. Bloomfield.—p. 61.

*Metabolic disturbances in experimental human vitamin B deficiency. K. O'Shea, F. D. W. Lukens, E. H. Montgomery and L. Jonas.—p. 153.

GASTRIC SECRETION. Histamine tests repeated in the same individuals after periods of 10 years or more show little or no change in some people. Others showed a marked fall in gastric secretion. A decline of basal gastric secretion with advancing years was demonstrated.

HUMAN VITAMIN B DEFICIENCY. A healthy woman aged 60 consumed a constant diet containing only a third of her calculated minimal amount of vitamin B_1. Supplements were given to make her intake adequate except for the B complex. After 8 weeks striking clinical and metabolic changes were evident; then thiamin hydrochloride was administered for 18 days; riboflavin was added for 20 days; finally, 42 gm. of brewers' yeast was given for 18 days. Edema appeared early, weight loss late in the deficiency; both were correlated only after the administration of yeast. Changes in carbohydrate metabolism occurred.

Journal of Nutrition

Vol. 19, January 1940

*Adequacy of a milk diet for the rat. L. R. Richardson and A. G. Hogan.—p. 13.

The state of vitamin A in the liver of the rat after feeding various forms of the vitamin. E. L. Gray, C. D. Hickman and E. F. Brown.—p. 39.

*Choline in the diet of chickens. O. D. Abbott and C. U. DeMasters.—p. 47.

*Quantitative requirements of the components of the vitamin B complex for lactation and growth of nursing young of the albino rat. B. Sure.—p. 57.

The essential nature of choline for lactation and growth of the albino rat. B. Sure.—p. 71.

*The influence of the nitrogen content of the diet on the caloric balances of pre-school children. J. E. Hawks, J. M. Voorhees, M. M. Bray and M. Dye.—p. 77.

*Minimum vitamin A and carotene requirements of mammalian species. H. R. Guilbert, C. E. Howell and G. H. Hart.—p. 91.

ADEQUACY OF MILK DIET. Four generations of female rats which received milk supplemented with iron, copper, manganese and iodine, produced and weaned almost as many young per litter as did the controls but produced only half as many litters per female. Milk is deficient in some other nutrient than the elements given. The reproductive performance of the fourth generation was not inferior to that of any of the preceding three.

CHOLINE. The addition of choline to the basal diet of pullets increased egg production, decreased mortality, inhibited abortion of egg yolks, and decreased the percentage of fatty acids in the livers. The concentration of fatty acids in livers of the males fed diets with or without choline was considerably lower than that in the livers of the pullets.

VITAMIN B COMPLEX AND LACTATION. A quantitative study was made of the amounts of various components of the vitamin B complex needed for successful lactation in rats. The requirement of thiamin, riboflavin and B_6 is greatly increased. It was not determined whether nicotinic acid was really essential for the lactating rat.

DIET AND CALORIE METABOLISM. Five preschool children served as subjects for 2 balance experiments, in each of which they received 2 diets, the first containing 3 and the second 4 gm. of protein per kg. of body weight. Total calories were kept the same. The increase in the protein content of the diets did not change the constant level of calorie utilization. The period-to-period variations for excretory values remained exceedingly constant on both diets and the absorption and retention figures varied in the same manner and to the same degree as the intake values. The change from the 3- to the 4-gm. protein diet increased the nitrogen content of the excreta, increased the average proportion of the intake calories eliminated, reduced the actual number of the intake calories available for body need but produced greater gains in weight in the children.

VITAMIN A AND CAROTENE. Extended studies on cattle, sheep, swine, horses and rats show

that 3 times the minimal vitamin A intake and 5 times the minimal carotene intake is necessary for significant storage and reproduction. The ratio of the relative efficiencies of vitamin A and of carotene widens with increasing levels of intake. Correlating these ratios with accepted vitamin A requirements, 60 I.U. of vitamin A or 200 I.U. of carotene per kg. of body weight are minimal for significant storage, optimal dark adaptation, and reproduction in humans.

Journal of Pediatrics

Vol. 16, January 1940

*The diet of adolescent girls. L. M. Bayer.—p. 56.
*Gastrointestinal allergy in children. J. H. Fries and J. Zizmar.—p. 69.
*Treatment of rickets with minimal viosterol dosage. A. D. Smith and N. A. Owens.—p. 76.
Psychologic care of the preschool child. R. M. Bakwin and H. Bakwin.—p. 89.

DIET OF ADOLESCENT GIRLS. The diets of 80 normal adolescent girls were generally poor, containing only two-thirds of the recommended essentials. The greatest difficulty was in vegetables, fruits, milk and whole cereals. No statistical relationship for the group between poor teeth and poor diet could be demonstrated.

GASTROINTESTINAL ALLERGY. The ingestion of specific foods provoked varied clinical disturbances in allergic children under controlled conditions. These children differed considerably in their individual skin test reactions to specific foods.

RICKETS. Eight hundred units of viosterol is an adequate minimal curative dosage for moderate and severe rickets, in negro infants.

Journal of the American Dental Association

Vol. 27, January 1940

*A study of the local oral effect of diet on the periodontal tissues and the gingival capillary structure. R. H. Pelzer.—p. 13.
Dental problems arising during pregnancy. A. F. Daro.—p. 51.

ORAL EFFECT OF DIET. Evidence does not yet clearly establish any single specific nutritional substance or group of substances as the sole forces in the initiation of caries and periodontal disease. Individuals using a diet that is hard and detergent show a characteristic oral syndrome of (a) wear of the morsal and proximal surfaces of the teeth; (b) a well-developed facial musculature; (c) little tendency to calculary deposition, and (d) a low caries index.

Journal of the American Medical Association

Vol. 114, January 6, 1940

*Focal infection and systemic disease: a critical appraisal. H. A. Reimann and W. P. Havens.—p. 1.
*Trichinosis and nonclinical infections with Trichinella spiralis. Prepared by a special committee appointed by R. C. Pollock, Chairman, Advisory Council on Live Stock and Meat Research.—p. 35.
*Heat and the nutritive value of proteins. Editorial.—p. 42.
*Vitamin P. Editorial.—p. 43.

Vol. 114, January 13, 1940

*The control of hypoproteinemia in surgical patients. I. S. Ravdin, A. Stengel and M. Prushankin.—p. 107.
*Ménières syndrome. J. H. Talbott and M. R. Brown.—p. 125.
*American women are getting thinner. Current comment.—p. 142.

Vol. 114, January 20, 1940

*Role of the gastrointestinal tract in production of cardiac symptoms. L. M. Morrison and W. A. Swalm.—p. 217.
*Geriatrics in relation to an adequate energy producing and protective diet. E. L. Tuohy.—p. 223.
*Health conditions in Germany. Current comment.—p. 252.

Vol. 114, January 27, 1940

*Nicotinic acid deficiency encephalopathy. N. Jolliffe, K. M. Bowman, L. A. Rosenblum and H. D. Fein.—p. 307.
*Pasteurization of milk. Editorial.—p. 329.

FOCAL INFECTION AND SYSTEMIC DISEASE. The causative relationship of infections about the teeth and tonsils to systemic disease is unproved. The removal of teeth and tonsils in an effort to influence the course of systemic diseases is unjustified in the majority of cases. Many foci of infection heal after recovery from systemic disease or when the general health is improved with hygienic and dietary measures.

TRICHINOSIS. The disease trichinosis and nonclinical and subclinical infections with Trichinella spiralis are generally acquired by man as a result of eating inadequately cooked pork containing living larvae. There is no specific treatment for trichinosis. Preventive measures must be employed in coping with the problem. Two effective measures are: (a) direct control

by adequate and thorough cooking of all pork not specially processed in a manner adequate to destroy all larvae (heating to 137°F.) and (b) indirect control by eliminating the source of infection of swine.

HEAT AND PROTEINS. The investigation of the effect of heat on the biologic value of proteins indicates that this is a factor to be considered. The proteins of whole wheat, bread, prepared cereal foods and meats have been shown to decrease in biologic value when subjected to heat. The proteins of legumes and soy beans are rendered more readily available upon heating.

VITAMIN P. Experiments of Scarborough appear to establish more definitely the possible existence of a dietary factor that is essential for the maintenance of capillary resistance. The capillary fragility present in the clinical cases studied was not ameliorated by ascorbic acid and the evidence clearly indicates the non-identity of the latter vitamin with vitamin P. Other investigators indicate the flavone nature of vitamin P.

HYPOPROTEINEMIA. Whatever the method used the surgeon should, if possible, provide for the maintenance of the basal caloric requirements of the patient and for sufficient protein to permit restoration of depleted protein stores and a more normal serum protein concentration. The prevention of edema, the normal healing of wounds and the regeneration of injured tissues require the maintenance of normal, or the replenishment of depleted serum protein and reserve stores of protein in the body.

MÉNIÈRES SYNDROME. Clinical improvement in all patients with Ménières syndrome was noted when patients were treated with high potassium intake along with a normal diet.

WOMEN GETTING THINNER. Average weights shown by statistics of the Metropolitan Life Insurance Company show a decline of 3 to 5 pounds for all ages and heights. Fashion and health education are responsible.

CARDIAC SYMPTOMS. A reflex nature in acute cardiac seizures and attacks of angina pectoris in patients with gastro-intestinal disturbances was demonstrated as springing from the vagal nerve arc originating in the stomach and esophagus. Therapeutic indications for such patients include a combination of drug, dietary and hygienic therapy as a routine procedure.

GERIATRICS. The growing importance of geriatrics is emphasized. Older people are urged to partake of freer and more adequate diets without overindulging. Thiamin chloride was shown to have a specific action in restoring muscular adequacy to the gastro-intestinal tract. Individual vitamin concentrates are preferred to heterogenous combinations.

HEALTH IN GERMANY. The totalitarian state has not been able to maintain the health of the German people. Lack of essential vitamin-containing foods appears to have caused an alarming increase in rickets and has resulted in a frightful prevalence of foot deformities. Diphtheria and tuberculosis show a considerable increase. Diseases due to bad food are particularly prevalent due in part to the decrease in the consumption of meat, fats, eggs and potatoes and the use of substitutes.

ENCEPHALOPATHY. The encephalopathic syndrome represents a complete nicotinic acid deficiency while pellagra represents a partial deficiency of nicotinic acid. Encephalopathy may occur in other diseases and may be caused by another factor.

PASTEURIZATION. Not only are the digestibility and biologic value of the nitrogenous compounds of milk unaffected by pasteurization but also the nutritional availability of calcium and phosphorus of the milk for rats is unchanged. Experiments indicate that 20 to 25% of vitamin B_1, vitamin C and iodine may be lost. All other known nutrients of cow's milk remain unaffected. Seasonal variations in the nutritional quality of milk are of greater significance than differences due to pasteurization.

Lancet

Vol. 237, January 6, 1940

*Vitamin E in the treatment of muscular dystrophies and nervous diseases. F. Bicknell.—p. 10.

*Anemia of pregnancy in India. H. N. Chatterjee.—p. 14.

Rationing.—p. 35.

7 WAYS TO USE THEM

1. *Baking buns and rolls of all kinds.*
2. *Baking sheet cakes, bar cakes, cookies.*
3. *Baking apples, potatoes, bananas.*
4. *Storing meats in refrigerator.*
5. *Storing other foods in refrigerator.*
6. *Roasting and broiling meats in oven.*
7. *As a large tray for general purposes.*

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Vol. 238, January 27, 1940

Treatment of eczema with vitamin-B complex. K. P. Kristensen and S. N. Vendel.—p. 170.

VITAMIN E. Normal diets may be poor in vitamin E. The results of giving vitamin E for muscular dystrophy and amyotrophic lateral sclerosis support the contention that these deficiency diseases are curable. Twenty-six cases are given.

ANEMIA OF PREGNANCY. A small series of patients with anemia of pregnancy showed improvement when treated with cholesterol injection.

Pennsylvania Medical Journal

Vol. 43, January 1940

*Acrodynia. S. Crawford.—p. 473.

ACRODYNIA. Acrodynia was recognized as a distinct disease more than 50 years ago. It is a disease syndrome of the nervous system in young children, the cause of which is not known. There is no specific treatment. Nourishing food, together with an adequate supply of vitamins and iron therapy help considerably.

Public Health Nursing

Vol. 32, January 1940

*Diabetes—A public health problem. E. P. Joslin.—p. 3.

DIABETES. Diabetes is a public health problem and increasingly so. There are at least 500,000 diabetics in the United States. This country has the highest diabetic incidence in the world. The disease is rare in the early decades; becomes more frequent in the middle decades and less common in the latter decades. The chief inciting cause of diabetes in the hereditarily predisposed is obesity. The endocrine glands have close associations with diabetes. If nurses and doctors will only study the disease and tell patients what they know, those who have it can live almost the life of those about them.

Public Health Reports

Vol. 55, January 5, 1940

*Mortality rates and economic status in rural areas. H. F. Dorn.—p. 3.

Vol. 55, January 26, 1940

*The disabling diseases of childhood. I. Characteristics and leading causes. D. F. Holland.—p. 135.

*Ocular manifestations of ariboflavinosis. H. D. Kruse, V. P. Sydenstriker, W. H. Sebrell and H. M. Cleckley. —p. 157.

MORTALITY RATES AND ECONOMIC STATUS. Existing data confirm the belief that health and economic status are directly related. Almost no information is available concerning either the total amount of illness or its variation among persons of different economic status in rural areas. Mortality records for the rural native population of Ohio show the standardized death rate in the low economic areas to be 10% greater than the corresponding rate in higher economic areas. The difference was particularly noticeable at the younger ages; after 55 the rates in the good agricultural areas were slightly greater.

DISABLING DISEASES OF CHILDHOOD. In a canvass of 83 representative urban communities conducted by the United States Public Health Service in 1935–1936, records of disabling illness in a 12-month period were obtained for 518,767 white children under 15 years of age. Disabling illnesses occurred with greater frequency among children under 10 years of age than in any subsequent period except old age. The amount of disability accruing from illnesses disabling for 7 consecutive days or longer among children of pre-school age amounted to 7 days per capita; at ages 5 to 9 years, the rate was 8 days per capita. The lowest disability rate observed in childhood, 5 days per capita, was among children 10 to 14 years of age. Except in the period of infancy, the rate of recovery from illness was notably higher among children than among adults. Four in every 5 disabling illnesses occurring among children under 15 years of age were due to acute communicable and respiratory diseases.

OCULAR MANIFESTATIONS OF ARIBOFLAVINOSIS. Nine patients with other symptoms of riboflavin deficiency developed ocular lesions. The principal manifestation was a keratitis. The corneal lesions improved or disappeared upon administration of riboflavin and reappeared on cessation of riboflavin therapy. In addition to cheilosis and seborrheic dermatitis, a specific type of glossitis was also observed. This also disappeared upon riboflavin treatment and recurred upon cessation of therapy.

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Science

Vol. 91, January 5, 1940

*A theory of protein metabolism: the transformation of proteins. C. L. A. Schmidt, F. W. Allen and H. Tarver.—p. 18.

Vol. 91, January 19, 1940

*Vitamin K. E. A. Doisy, S. B. Binkley, S. A. Thayer and R. W. McKee.—p. 58.

THEORY OF PROTEIN METABOLISM. The current view of protein metabolism is that proteins are hydrolyzed to their constituent amino acids, and these, in turn, are deaminized and the carbon-containing residues are then oxidized or converted into other substances. Synthesis of proteins can also take place in the body by the transformation of existing proteins into others without first being broken down to amino acids.

VITAMIN K. Vitamin K is widely distributed in green leaves and vegetables with an abundance in dried chestnut, spinach, cabbage and alfalfa leaves. Methods of extraction and purification have been devised, the isolation effected and the structure of vitamin K_1 worked out and verified by synthesis.

INSTITUTION MANAGEMENT

American Restaurant Magazine

Vol. 24, January 1940

*A new approach to standard portion control. G. L. Wenzel.—p. 32.
*We ran a recipe contest. L. Weaver.—p. 36.
*Avoid that post-holiday menu slump. L. D. Freeman.—p. 40.

Vol. 24, February 1940

*Tell-tale impressions of small restaurants. A. M. Snapper.—p. 30.
*Factors in buying beef. G. L. Wenzel & S. Mallick.—p. 33.
*How kitchen machinery helps cut costs. A. C. Schueren.—p. 40.
*The fight against noise. H. C. Siekman.—p. 42.
*Cup-control—a new approach to standardized portioning.—p. 48.

STANDARD PORTIONS. G. L. Wenzel, director, The American Restaurant Institute, offers a new approach to the control of standard portions. Buying by specification, cooking by formula, and the use of a standard portion manual, are recommended for control. A manual of standard portions has been published for sale.

RECIPE CONTEST. The Chicago Y. M. C. A. cudgeled its brain for sources of new recipes and developed the idea of a recipe contest, patrons sending in favorite recipes. Results, an increased business and an excellent mailing list, and most important, new recipes for the file. Description of the contest, and a few of the prize winners are features of the article.

CASSEROLE SPECIALS. New casserole combinations and old favorites are given to tempt the appetite when the weather is cold and to avoid menu monotony.

RESTAURANT CONTROL. A stimulating article covering the fine points of cleanliness, service and food preparation, which are so often neglected in small restaurants.

BUYING BEEF. Definite directions for selection of the wholesale cuts of beef and suggestions for methods of securing accurate information from the dealers are clearly outlined in this illustrated article.

MACHINERY AND COSTS. Electric meat cutters offer appreciable savings in costs and help control standard portions of meat. Figures and per cents are given for actual cases that prove the value of this machine in food production.

NOISE. Increased guest satisfaction and employee efficiency result from increased quiet in restaurants. Breakage costs are also reduced by a program to eliminate noise.

STANDARD PORTIONS. Use of paper soufflé cups makes standard portions easier to control and does not add undue expense to food costs. An attractive relish tray is recommended to replace "the old, annoying sprig of parsley".

Buildings and Building Management

Vol. 40, January 1940

*Systematic operating records. F. L. Gilbert.—p. 28.
*Practical cleaning methods.—p. 39.
*Progress in lighting.—p. 44.
*Pointers on painting. K. Cady.—p. 46.

Salad days are here again!

BANANA BERRY SALAD is a cheery way to say "it's Spring." A colorful, delicately flavored salad with fresh berries, ripe bananas, and cool, crisp salad greens.

For best mellow flavor and easy digestibility, be sure to use fully ripe bananas . . . they are fully ripe when the yellow peel is generously flecked with brown.

Banana Berry Salad

(1 INDIVIDUAL SERVING)

1 ripe banana* Berries Salad greens

**Ripe banana . . . yellow peel flecked with brown*

Peel and cut banana lengthwise into halves. Place halves together on a plate. Slide one half off the other to form a step. Top this step with thin slices of strawberries or other fruit. Garnish with lettuce or other greens.

Serve with a cream dressing or mayonnaise.

Banana Berry Salad is only one of the many new uses for bananas

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*Heating for comfort.—p. 49.
*Better elevator service.—p. 51.
Modern plumbing fixtures.—p. 54.
Insulating against noise. W. W. Waterfall.—p. 56.
*Apartment superintendent's report.—p. 58.
*Basic air conditioning.—p. 60.

Vol. 40, February 1940

*Leadership in management. L. P. Call, Jr.—p. 17.
*Quiet offices rent better. E. G. Laughlin.—p. 20.
*Water and water piping. W. J. Ryan.—p. 24.
Managers study heating costs.—p. 28.
*Case studies in decorating. V. Modern photomurals.—p. 30.

OPERATING RECORDS. F. L. Gilbert, operating manager of the Lincoln-Liberty Building in Philadelphia, points out the fallacy of a building running itself with little supervision and explains some of the records he uses to achieve efficiently systematized activities in the operation of an office building. He minimizes human element uncertainty by outlining in minute detail the duties of each employee. The check on the performance of duties is made through daily reports by each employee. Forms and records vary with the type of building and equipment; nevertheless this article has a definite application to all types of business.

CLEANING. Thirty cents of every operating-cost dollar in office buildings is spent on cleaning. Article emphasizes the economy of buying the proper tools and correct procedures specific for the various types of surfaces. Procedures are given for cleaning Venetian blinds.

LIGHTING. Describes new developments in lighting and new products on the market.

PAINTING. A stimulating article on decorating evaluates paint, wallpaper, construction repairs and materials and tools needed for painting; tells which shortcuts are economical and which are not.

HEATING. This article recommends remedies for heat losses and troubles resulting from incorrect operation of the heating plant. Control systems that use zoning for exposure and zoning for occupancy are evaluated.

ELEVATORS. Stating that good elevator service is that which "can pick up passengers with sufficient promptness and keep them from feeling that they are being unnecessarily delayed", this article explains how to achieve such service. A typical set of rules and the graphic form recording the operators' schedules have a carry-over into other types of work, for they illustrate the writing of directions and the making of schedules for employees.

HOUSE REPORT. This form for the apartment superintendent's monthly report lists items to be inspected under the headings—elevator, entrance, and interior, with columns for the checking of their status headed as follows: O.K., repairs needed, painting needed, stained or dirty, replacements and remarks.

AIR-CONDITIONING. A review of some of the fundamentals and definitions of terms current in air-condition installations, together with an explanation of the various types of equipment available.

LEADERSHIP. An experienced building manager writes of the qualities essential in leadership, listing self-confidence, moral ascendancy, self-sacrifice, paternalism, fairness, initiative, decision, dignity and courage. He describes each, telling what it involves and the means of achieving it.

ACOUSTICS. The procedures and materials used by E. G. Laughlin, manager of two Hollywood buildings, to improve the acoustics and at the same time modernize the rooms, are described.

WATER SOFTENING. Third in a series of articles on water and water piping by William J. Ryan explaining 3 types of softening: zeolite, lime-soda, and phosphate, with the chemical reactions, the advantages and disadvantages and the necessary cautions and attention required in the use of each.

DECORATING. The mural, one of the oldest forms of artistic expression known to man, has been brought up to date by the camera with the creation of photomurals now used by many businesses for both advertising and decoration. Specific reference is made to its use in dining rooms patronized by the general public, stating that outdoor scenes are favored because they lend themselves to good lighting which helps to put the guests in a pleasant frame of mind and which gives the effect of added space. The illustrations show unique and spectacular possibilities.

Natural whole wheat flavor

TEMPTS YOUNG APPETITES

Ralston a "preferred" cereal in Diets planned for Children

Time and time again, Ralston Wheat Cereal is specified in children's diets in preference to other cereals—not only because of its extra vitamin B_1 content but also because of its natural delicious whole wheat flavor.

In milling Ralston, none of the natural food properties or appetizing goodness of whole wheat is removed. Only the coarsest outer bran layer is taken out. The only enrichment is the addition of extra wheat germ—one of Nature's richest sources of vitamin B_1.

Ralston is widely prescribed for infant feeding at the time doctors recommend a change from starting cereals and for growing children, adults, convalescents and nursing mothers.

RALSTON WHEAT CEREAL
ANALYSIS IN GRAMS
Based on 30 grams Dry Ralston

	GRAMS
Fat	.51
Protein	4.5
Carbohydrates	21.0
Ash	.5
Iron	.0012
Calcium	.015
Phosphorus	.12
Manganese	.0012
Copper	.00018

106 Calories

30 grams Ralston Wheat Cereal contain 65 International Units vitamin B_1. Ralston is a rich source of vitamin E and a good source of vitamin G.

FREE SAMPLES—Simply write your request on a penny postal and address Ralston Purina Company, 914D Checkerboard Square, St. Louis, Mo. (This offer limited to residents of the United States.)

Children love it

Cooks in 5 minutes

RALSTON . . . ***natural*** **wheat cereal** ***naturally*** **fortified with added wheat germ for extra vitamin B_1**

Chain Store Age

Vol. 16, January 1940

*Controlling inventories by mechanical means. R. G. Parker.—p. 13.

CONTROLLING INVENTORIES. Short description of use of punch card tabulating machines in a new system of inventory and storeroom control. The use of these machines has solved several problems, such as speeding the filling of warehouse orders, shortening the routine between order filling and billing, prevention of "outs" in essential items, and simplification in record keeping with resulting decrease in personnel costs.

Food Industries

Vol. 12, February 1940

*Short-time pasteurization as it looks to the milk plant operator. W. D. Dotterer.—p. 46.
*How to use dextrose in canning. Part II. E. W. Eickelberg.—p. 50.
*Bread baking test suggested for pastry flours. J. A. Shellenberger.—p. 52.
*What makes a world's fair exhibit click. I. C. Miller.—p. 55.
*Fats and oils battle for food industries market. G. W. McBride.—p. 60.
*Performance data determined for new food freezing plant. Part I. W. J. Finnegan.—p. 64.
*The food industry news.—p. 70.
*Food technology—new discoveries and inventions.—p. 90.

SHORT TIME PASTEURIZATION. Results of tests carried out to compare the older 30 minute holding period method of pasteurization with the newer short-time, high temperature method, are of interest to makers of butter and cheese, fruit juices and milk, cream and ice cream.

DEXTROSE IN CANNING. Factors controlling the substitution of dextrose for part of the sucrose used in canned fruits and vegetables are set forth in tables. In the case of fruits usually 25 to 50% of the sucrose can be replaced by dextrose. The improved flavor of the fruits and vegetables packed with the dextrose-sucrose blends obtained by experienced trials, indicates a possible means of enhancing the taste and palatability over a longer period of time.

TESTING PASTRY FLOUR. A quick and accurate method for evaluating cake-baking properties of soft wheat flours by using the standard bread-baking test of the American Association of Cereal Chemists, which heretofore has been applied to hard wheat flours, is described.

EXHIBITS THAT CLICK. Part II of an article showing how and why the Borden, the pressure cooker, the Standard Brands' and Swift Company exhibits "stole" the show at the 1939 New York World's Fair. Most successful of the food exhibits brought the food plant to the people, showing how their products were made or used.

FAT VS. OILS. An interesting article dealing with the many economic, technical and political factors that affect the price and availability of various fats and oils. Production and distribution charts of edible oils and fats show them to be primarily domestic in origin. The new "high-ratio" shortenings recently perfected and introduced to the baking trade are enabling the baker to produce cakes actually better than home-baked cakes. Butter as well as lard will soon feel the competition of vegetable oil shortenings.

QUICK FREEZING. Innovations in quick freezing methods which provide superior products are set forth by W. J. Finnegan in his first article presenting operating data on freezing not readily available and which help to attain higher quality and reduced labor costs.

FOOD NEWS. This section of *Food Industries* contains reports on tomato research. The January action of the U. S. Foods Standards Committee on oleomargarine, canned fruit for salad and canned fruit cocktail, and identity standards for bread, wholewheat bread, raisin bread and milk bread; new standards for canned cherries, canned apricots, canned pears and canned peaches; a schedule of current action on food standards; and chart of food commodity prices are of special interest.

FOOD TECHNOLOGY. This section devoted to new discoveries and inventions shows that cold storage prolongs keeping quality of peaches; that the storability of grapes is affected by their degree of ripeness; that the sterilizing effect of chlorine solution depends upon the amount of "available" chlorine; that the best preservation treatment for eggs in modern practice, is to store eggs in an atmosphere containing 2 to 2.5%

Every Doctor Should Know these Facts about

MOLASSES

NEW INFORMATION ON A RICH SOURCE OF HIGHLY AVAILABLE IRON

QUICK SUMMARY

RESULTS: New Orleans molasses—both by chemical and biological procedures—is known to be one of the richest food sources of iron—and even more important, it has now been proven that this iron is from 80% to 97% available, depending upon the grade of molasses.

HOW TESTED: (A) Chemically and biologically[1]. (B) Clinically[2].

SUGGESTED USES: For infant and child feeding where its high food value *plus* iron content make molasses a valuable dietary asset; and to provide extra iron during pregnancy.

AVAILABLE IRON CONTENT: 0.653 mgs. per tablespoonful in Brer Rabbit Molasses—Gold Label grade. 1.078 mgs. per tablespoonful in Brer Rabbit Molasses—Green Label grade.

HOW TO USE: One to three tablespoonfuls daily. This may be taken plain, on bread, cereal, desserts or in milk. Physicians may vary the amount from one to three or more tablespoonfuls daily, depending on the age, condition and tolerance of the individual.

IT IS WELL KNOWN that many foods—even those with high iron content—do not have this element in a form available for use by the body.

To establish the facts as to the availability of iron in molasses made from Louisiana sugar cane, the makers of Brer Rabbit Molasses co-operated in carrying out chemical, biological and clinical research. The molasses used in all of these experiments was BRER RABBIT.

Chemical and biological tests now reported[1] show the availability of iron in Brer Rabbit Molasses to be over 90% in the Gold Label grade, in the Green Label grade over 80%. Medicinal iron was used as the standard for comparison in all tests.

Taste preferences for molasses differ. Brer Rabbit comes in two flavors to meet all requirements. If a dark, full-flavored molasses is desired, specify Green Label Brer Rabbit (Molasses "B" in table). If a light, mild-flavored molasses is wanted, specify Gold Label Brer Rabbit (Molasses "A" in table).

May we suggest that you recommend the use of New Orleans molasses where a higher iron content in the dietary is desirable? Penick & Ford, Ltd., Inc., Manufacturers of Brer Rabbit Molasses, New Orleans, La.

TABLE[1]

	Total iron mg/100 gm	Per cent availability	Available iron mg/100 gm
MOLASSES "A"*	3.2	97	3.1
MOLASSES "B"**	6.0	85	5.1
BEEF LIVER	8.2	70	5.7
OATMEAL	4.8	96	4.6
APRICOTS (*dry*)	4.1	98	4.0
EGGS	3.1	100	3.1
WHEAT	5.0	47	2.4
RAISINS (*Muscat*)	3.0	62	1.9
PARSLEY	3.2	50	1.6
BEEF MUSCLE	3.0	50	1.5
OYSTERS	5.8	22	1.3
CABBAGE	1.8	72	1.3
MUTTON	5.1	24	1.2
LETTUCE	1.5	63	0.9
SPINACH	2.6	20	0.5

*Brer Rabbit—Gold Label **Brer Rabbit—Green Label

1. Am. J. Dig. Dis. Vol. VI, No. 7 (Sept.) pp. 459-62, 1939.
2. Clinical research completed. Paper being prepared for publication. Reprints of these papers will be sent physicians on request.

(In writing to advertisers, please mention the journal—it helps.)

carbon dioxide and having a high but not saturated humidity with the temperature not allowed to rise above 15°C. (59°F.). Even after 7–10 months' storage under these conditions, eggs are still fresh enough to poach.

The Horwath Hotel Accountant

Vol. 20, February 1940

*The trend of business in hotels.—p. 3.
*Summary of the trend of business in hotels for 1939.—p. 4.
*Trend of hotel room occupancies and rates.—p. 6.

FOOD COSTS. December business trends in hotels increased but slightly over those of the same month last year. The total food cost per dollar sale in November as in October was 1% above that of the corresponding month of 1938.

SUMMARY 1939 BUSINESS TRENDS. Three charts present a summary of total sales, room sales, restaurant sales, room rates and occupancy in hotels in various sections of the United States. Chart 1 shows percentages of change for each month of 1939 from the corresponding month of 1938; chart 2 shows average variations for each month of 1939 using figures for 1929 as the basis of 100; chart 3 compares all years from 1928–1939 using 1929 figures as a basis.

ROOM OCCUPANCIES AND RATES TRENDS. Tabulations in graph form of trends in room occupancies, rates, and sales in hotels since 1927 show a direct relation between these three factors. Averages have varied from highest in 1929–30 to lowest in 1933 and are again on the upward trend.

Hospital Management

Vol. 49, January 1940

Controlling costs in the dietary department. M. P. Tanner.—p. 43.
*When cooking beef. I. S. Willson.—p. 44.
General menus for February.—p. 48.

COOKING BEEF. Regardless of cut, the cooking rule should always be low temperature and proper cooking time. Use a constant temperature of 300°F. in roasting beef and an internal meat thermometer for testing doneness; thus avoiding the shrinkage due to a high temperature and over-cooking.

Hotel Management

Vol. 37, February 1940

Books for profit.—p. 4.
Yours for grapefruit profits.—p. 6.
*Banquet salesmanship.—p. 16.
Model living room.—p. 22.
Model bedroom.—p. 23.
*Guide to blanket buying. C. M. Dahl.—p. 24.
Fashion parade.—p. 26.
*Training for food service. J. O. Dahl.—p. 28.
*Air conditioning for 1940.—p. 31.

BANQUET SALES. Through practice of friendly banquet salesmanship Kugler's Restaurant in Philadelphia has practically doubled its banquet revenue in 4 years. A card file is used for contact and follow-up system. Illustrations of 12 typical letters, each planned from a different approach, are used to sell banquets.

BLANKET BUYING. Factors affecting the quality of a good blanket: all-wool, wool-filled, part wool, or all cotton are presented. The detailed information on degree of insulation, weight, binding, depreciation, sizes, quantities to buy, laundering, storage, and terms used in buying will prove invaluable.

FOOD SERVICE TRAINING. *Hotel Management* editors present detailed outline with methods of teaching and reference material for courses for stewards and cooks. A dining room and kitchen are recommended for classes so that students can work with the material they must use on the job.

AIR-CONDITIONING. Air-conditioning has increased sales in both hotels and restaurants because of temperature control, humidity control, adequate ventilation, circulation of air, and cleansing of air. A chart presents the results of a questionnaire answered by many hotels.

Hotel Monthly

Vol. 48, January 1940

*Arrowhead Springs, California.—p. 11.
*Census of business: 1939.—p. 20.
*Observations by a globe-trotting architect. L. M. Perrott.—p. 22.
*Skyway suites capitalize upon hidden asset.—p. 26.
*A la carte, table d'hote, selective menu. A. Shircliffe.—p. 29.
*Housekeeper's primer. J. C. VanNess.—p. 38.
*100 years of menu making.—p. 41.
*The coffee shop. E. Boles.—p. 45.

AMERICAN SPA. Bruno Lessing describes the new fireproof hotel at Arrowhead Springs, California, offering the last word in recreational equipment for the promotion of health and comfort. Many lovely photographs of in-

LET THE NEW EDISON-HOTPOINT

Husky Oven

SOLVE YOUR BAKING PROBLEM

Here, ready for installation in your kitchen, is an electric oven built to meet the high standards of the modern hospital. Hi-Speed Calrod electric heating units bring new speed and directionally controlled heat. Baking and roasting results are consistently good because Automatic Temperature Control keeps heat in each chamber at temperature desired by the chef. The new Husky is an all-purpose, big capacity oven, priced within reach of the small institution but equal to the demands of the biggest kitchen. Versatile, too, for it can be converted into a Husky Range by adding the range top that best fits your needs.

Write for full information today!

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As your requirements increase you can increase oven capacity by adding additional oven conpartments—just like a sectional bookcase—add a second deck (lower right), and then a third deck (above). Each oven provides a separate control of top and bottom heat.

KITCHEN EQUIPMENT HOUSES

Hotpoint COOKING EQUIPMENT

dividual rooms and special features, including a complete floor plan of the hotel, accompany the article.

HOTEL CENSUS—1939. A condensed form of the 4-page questionnaire to be sent out to all hotel managers, which when data is released in the early fall, will make possible accurate comparisons of business status and practices over the country.

FOREIGN HOTELS. The architect, Leslie M. Perrot, writes of his observations of foreign hotels in 6 countries, where he says great advances in the moderate-priced hotel have been most noticeable. Floor plans from Stockholm, Copenhagen, Oslo, Berlin and Paris are given.

SKYWAY SUITES. Hotel Stevens, Chicago, has remodeled their 23rd floor to take advantage of the lovely Lake Michigan view with lake front suites which have plate glass windows reaching from wall to wall and from ceiling almost to the floor.

TABLE D'HOTE, A LA CARTE. Arguments pro and con on the question of table d'hote vs. a la carte are elaborated by Arnold Shircliffe who offers the "selective meal" as an improvement on both, with the argument that it combines the better parts of both types of service.

LINEN ROOM. Jane C. VanNess offers suggestions for organization of the hotel linen room for convenience in use and inventory and also tells ways of reclaiming partially worn out supplies.

MENUS. Second in a series of menu reproductions from Arnold Shircliffe collection, purposing to show changing eating habits of people in the United States during the past 100 years.

COFFEE SHOP. Ernie Boles, chef at the Palmer House in Chicago, demonstrates an easy way to make successful ravioli, and offers boned turkey wings as an interesting menu item.

Journal of Home Economics

Vol. 32, February 1940

*The school lunch in rural and small-town schools—a symposium. M. Spalding.—p. 85.
*O.E.S. fifth reader. S. L. Smith & G. Adams.—p. 95.
*Conference of food service directors. Editorial.—p. 101.
*The ethics of advertising. Editorial.—p. 102.
*The ascorbic acid (vitamin C) content of six varieties of cantaloupes. M. A. Moseley, Jr., & G. H. Satterfield. —p. 104.

SCHOOL LUNCH. Four Maryland women, 3 of whom are county supervisors of home economics and one a nutritionist for the State Board of Health, have contributed to this symposium to emphasize the need for conducting the school cafeteria on a non-profit making basis and as an educational unit in the school program, each giving methods of dealing with the problems. Mary Spalding, consultant in nutrition for the division of child hygiene of the Massachusetts Department of Public Health, summarizes the 4 articles with a plea for assistance from A.D.A., A.H.E.A. and the Conference of Food Service Directors in the preparation of a manual for the untrained women so that they may give better service to the many rural children with whose health and education they are concerned.

BULLETINS. Sybil Smith and Georgian Adams, associate home economists in the U. S. Office of Experiment Stations, have compiled a list of state agriculture experiment station bulletins of interest to home economists, known as the O.E.S. Fifth Reader. Its scope is shown by the table of contents in which the publications listed are classified as to subject matter.

FOOD SERVICE DIRECTORS. An editorial describes the Conference of Food Service Directors held in Baltimore November 2, 3 and 4, 1939, emphasizing the educational value and the place of the school lunch in the success of the whole school program.

ADVERTISING. An editorial describes the advances toward ethical advertising from the time when it did not occur to a newspaper man that making false promises and deluding sick persons was a social crime, to today when he is beginning to realize that honesty is the best business policy.

VITAMIN C. Under the direction of Dr. G. Howard Satterfield, professor of biochemistry at the University of North Carolina, M. A. Moseley, Jr., teaching fellow, did research on the ascorbic acid content of 6 varieties of cantaloupes which resulted in the following findings:

You should see patients go for these ALL-BRAN muffins
—containing helpful "bulk"
Nothing zips up a breakfast tray more than hot, golden-brown ALL-BRAN muffins. But dietitians know there's an even greater reason for including these delicious muffins in their menus. Because KELLOGG'S ALL-BRAN supplies laxative "bulk," so necessary to inactive patients for regular elimination.
Would you like to have the approved recipes for this and other delicious hot breads made with KELLOGG'S ALL-BRAN?
Free Hot Bread Recipes
Write to Home Economics Department, JAD-04, Kellogg Company, Battle Creek, Michigan.
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Kellogg's
ALL-BRAN
A NATURAL LAXATIVE CEREAL

"The average ascorbic acid content of the Rocky Ford is 49% greater than that of the Banana and 23% greater than that of Hale's Best. Very ripe melons usually have a lower ascorbic acid content. No relationship was found between the size of the cantaloupes and their content of ascorbic acid. Large variations in the amount of ascorbic acid occur within the same variety. One-half cantaloupe daily will meet the ascorbic acid needs of the adult".

Modern Hospital

Vol. 54, February 1940

*Clean dishes and clean pans. M. deGarmo Bryan.—p. 96.
*Diet in sulfanilamide therapy. L. Turner.—p. 98.
*Figuring food costs rapidly. G. S. Saunders.—p. 100.
March menus for the small hospital.—p. 102.

CLEAN DISHES AND CLEAN PANS. To stress the importance of having clean dishes, Mary deGarmo Bryan thoroughly explains efficient technique in mechanical dishwashing. Several important features to look for in purchasing dishwashing machines are mentioned, in addition to suggestions to ensure best results in dishwashing procedure and in the thorough washing of pots and pans.

DIET IN SULFANILAMIDE THERAPY. Patients who are being treated with sulfanilamide need dietary modifications to furnish necessary reinforcements for normal functioning and protection of the body. Variations in caloric, glucose and protein intake are discussed.

FIGURING FOOD COSTS RAPIDLY. The presentation of 3 illustrative charts to show how purchasing costs of food items may be figured with accuracy and less time. Certain basic factors are applied, such as commercial classification of food as purchased, commercial gradings, composition, age, size, shrinkage, and preparation wastes.

The Nation's Schools

Vol. 25, February 1940

*When classroom becomes cafeteria. E. L. Muzzall.—p. 68.
*Food habits and health. M. Koehne.—p. 72.

CLASSROOM-CAFETERIA. Limited funds and crowded quarters necessitated the construction of a combination classroom and cafeteria for the Junior-Senior High School of Toppenish, Washington. When the main room of the cafeteria is not in use, it is divided into 2 classrooms by a soundproof folding partition. A special partition with a door at each end, built between the main room and the kitchen unit, makes it possible for pupils to work in the kitchen unit without interfering with classes in the classrooms. The article includes building construction details.

FOOD HABITS AND HEALTH. A description of an advisory service for lunchrooms. The premise that in rural and small town areas as provided in Ohio under the direction of Martha Koehne, nutritionist, Bureau of Child Hygiene, when an educational institution enters the food service field, it must safeguard the health of the pupils and give them high standards by which to judge good food sanitation practices, is the foundation of this service. Every school lunchroom is urged to offer a special plate lunch at a bargain price, representing a nutritionally adequate meal for the children. Prevailing food practices of the community are studied and the plate special planned to fit into the food habits of the children with the gradual introduction of more desirable foods. A discussion of other problems involved in making the lunchroom a part of the school health education program is included in the article.

Restaurant Management

Vol. 64, January 1940

*Louis P. DeGouy's good food hints. L. P. DeGouy.—p. 12.
*Restaurant layouts.—p. 20.
*500 ways to cut food costs. Number 2. J. B. O'Keefe.—p. 26.
*Dictionary of cheeses.—p. 32.

Vol. 64, February 1940

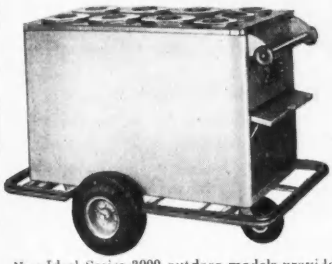
*500 ways to cut food costs. Number 3. J. B. O'Keefe.—p. 18.
*Prize menus.—p. 22.
*Training for food service. Number 2.—p. 32.
Ideas for cost control.—p. 34.

FOOD HINTS. Suggestions on baking pies, whipping cream, and securing new and interesting flavors.

RESTAURANT LAYOUTS. Two pages of terse, descriptive material accompanies the 2 layouts for small sandwich shops in New York City.

THE *ADVANCED* LINE OF *Ideal* FOOD CONVEYOR SYSTEMS

MEETS EVERY SERVICE CONDITION AND CAPACITY REQUIREMENT



New Ideal Series 3000 outdoor models provide extreme ease in handling food to cottages.

New Ideal Series 1000 includes many models which assure ease and speed in distribution of perfectly served foods.

New Ideal Series 5000 tray conveyors, with and without electric heat as desired, are amazingly light in weight and easy to handle.

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It is easy to put your ideals of food service into effect with Ideal Food Conveyors. You can meet any budget requirement because the price varies with the material utilized in construction, which is available in infinite variety. You are assured a safe, approved, guaranteed unit whichever you select, because all Ideal Conveyors are designed and built the same way. Each embodies advancements and refinements developed in years of manufacturing such specialized equipment. The Ideal is the pioneer and leader in this field. You want these Ideal features:

- Normal moisture and palatability of food maintained by Ideal automatic temperature control. Dual lights guide attendant.
- Effortless handling of unit provided by scientific load distribution and wheel placement, assuring perfect balance.
- Absolute rigidity of top deck entirely assured by patented bridge-type assembly of food wells and heating elements.
- Easy cleaning inside and outside made possible by rounded, seamless, unobstructed corners.
- Convenient, speedy handling of trays and equipment assured by greater shelf area.
- Extra and double meat tray capacity afforded by slide-easy warming drawer which holds standard utensil.
- Smooth, rigid, two-piece body construction. Long life, good appearance.
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FOOD COSTS. Number 2 in the series of articles by J. B. O'Keefe on cutting food costs. He suggests an honor system, combined with careful checking, for securing accurate deliveries of food.

DICTIONARY OF CHEESES. For your use, a complete list and description of all kinds of cheeses, plus an interesting pictorial map showing sources.

FOOD COSTS. Number 3 in a series of 12 articles by J. B. O'Keefe stresses the use of food control in the store, with provisions for easy, quick check-ups, written records, and elimination of unnecessary spoilage.

PRIZE MENUS. Additional winners in menu contest, with photographs of luncheon dishes and complete menus and costs of dishes served.

TRAINING FOR FOOD SERVICE. Second in a series of detailed outlines for hotel and restaurant training. Planned for vocational schools and restaurants, the outlines offer practical ideas usable in any food establishment. Copies free from J. O. Dahl, editorial director.

EDUCATION

Bulletin of the American College of Surgeons

Vol. 24, October 1939

Twenty-second annual hospital standardization report: The 1939 survey.—p. 313; Approved hospitals of the United States and Canada and other Countries. —p. 333

Education

Vol. 60, September 1939

*Principles of teaching. W. Hermanus.—p. 2.

PRINCIPLES OF TEACHING. A teacher may borrow thoughts from books to teach a subject, but no book can teach him how to teach a student. He must recognize that, while performance of duty may be the highest aim of a soldier, for a teacher it is the lowest and that "genuine teaching begins where duty ends." Effective teaching requires a sensitiveness to the needs of the students and to acquire this sensitiveness means "to forget oneself." Furthermore, when a teacher possesses the qualities of humility, patience, justice, and truthfulness he may secure the confidence of students through which "teaching rises to the level of education."

Journal of the Association of American Medical Colleges

Vol. 14, September 1939

*Opportunity and responsibility. L. Porter.—p. 304.

OPPORTUNITY AND RESPONSIBILITY. To the young physician entering upon his career there awaits a variety of rich opportunities, among them opportunities to prevent disease and relieve suffering, to elevate the standards of practice and advance his profession, to participate in educational and civic activities beneficial to the individual, the community, and the profession, and to assume a leadership such as can only come to the educated, trained, and ethically minded man. The "gateway to every opportunity is responsibility." The physician was once called the "family doctor", then the "general practitioner", and now the "specialist" has become fashionable. But, so long as the family remains the social unit the family physician will be the "key man" whenever and wherever medicine is practiced in the best interests of patients and of the community. With the many technical health services now available—those of nurses, pharmacists, dentists, dietitians, physiotherapists, psychotherapists, radiologists, laboratory workers—it may be that a new type of "specialist" who might be called "health advisor" is needed to take up the duties of the "general practitioner." Through a "health advisor" all of the technical aids as well as the services of the various medical and surgical specialists might be made to serve most effectively the health needs of individuals and families.

The young physician must realize that practice is not like the "clock-work routine" of the medical school laboratories, clinics, and wards; that, by virtue of the excellence of the training he is, in the beginning, handicapped in understanding the problems of practice, for medical schools are forced to concentrate on acute diseases rather than on a more typical proportion of acute and chronic diseases; and that,

INFANTS IMPROVED

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KNOX GELATINE *(U.S.P.)*

A lower incidence of vomiting, diarrhea, and constipation resulted from adding 1% and 2% plain, unflavored gelatine to milk fed a group of infants two years ago. An additional advantage was a decrease in the incidence of upper-respiratory infections.

Repetition of this work* has substantiated the results.

PLAIN *(Sparkling)* KNOX GELATINE (U.S.P.) was used in all these studies.

CONVENIENT GELATINE PROPORTIONS:

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One envelope to 3 pints or 1 level teaspoon to 18 ounces of milk.

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* Further Clinical Observations on Feeding Infants Whole Milk, Gelatinized Milk, and Acidified Milk, C. LORING JOSLIN, M.D., F.A.A.P.; Bulletin of the School of Medicine, University of Maryland; Jan. 1939.

KNOX GELATINE, Johnstown, New York, Dept. 466.

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while during his training in the hospital, he could depend on many people for assistance, in practice he can shift the responsibility for a patient to no one. If, in practice, he is able to administer the array of services he can bring most of the preventive and healing values of modern medicine to his patients.

Journal of Engineering Education

Vol. 30, October 1939

*Trends in engineering education. D. C. Jackson. —p. 138.

Vol. 30, December 1939

*Understanding plus. D. B. Prentice.—p. 335.

TRENDS. A digest of certain important trends revealed in a chapter of the report "Present Status and Trends in Engineering Education in the United States." The report is a result of the recent work of the Committee on Engineering Schools of the Engineers' Council for Professional Development. Trends selected for summarizing here are presented under the following headings: Improved Pedagogical Methods and Research Relations; Social Relations and Responsibilities of Engineering Schools; Trends and Variations among Criteria; Varieties among Curricula and Organized Options; Trends in Evening Curricula and Cooperative Courses; Lack of Clear Definition of Guides; and One Unfortunate Influence of Foggy Definitions.

UNDERSTANDING PLUS. Plato, in the "Republic" stated that the acquiring of knowledge was a process involving four successive steps: perception, faith, understanding, and reason. They correspond to the mental growth of the individual. While that growth very often terminates short of the fourth, and at various ages these steps may overlap, it remains true that in acquiring a comprehensive knowledge of any single item these steps must be taken in order. "Maturity of intellect is a *sine qua non* for the fourth step." Most high school and college teaching and learning is at the level of understanding, but the differentiation we expect to find as a result of college training is "ability to use knowledge and to understand the significance of facts." This ability can only be developed by an instructor if he repeatedly carries students beyond the level of understanding and forces them to exercise their brains at the level of reasoning.

National Society of College Teachers of Education

Yearbook 27, October 1939

*College instruction and changes and trends in American life. H. R. Douglass and H. P. Rainey.—p. 70.

COLLEGE INSTRUCTION. The enrollment in American colleges is 6 times that of 1900 and the colleges have undergone remarkable changes during this period. If, however, they are to fulfill their true responsibility of supplying trained and sympathetic technological, social, and cultural leadership for our institutions they must become still more responsive to the significant shifts and trends that have occurred in American life. Some of the major changes which have brought the necessity for adjustment on the part of colleges are: (1) the scientific and technological changes with their accompanying increasing dependence on scientific knowledge and the application of scientific principles; (2) population trends which have been marked by a decreased birth rate and increased life span; (3) economic-political trends with the resulting increased responsibility assumed by the government and lack of sufficient technically proficient leadership; (4) the necessity of education to provide a substitute for the earlier influence of the church; (5) increased leisure time resulting from shorter working day; and (6) developments in communications which mean that young people must be educated to withstand the force of political and commercial propaganda. A clear conception of such changes and trends as these, and of their implications in education, is basic to sound thinking about college instruction.

North Central Association Quarterly

Vol. 14, October 1939

*The curriculum in the university. C. Oldfather.—p. 141.

CURRICULUM IN THE UNIVERSITY. There is quite general agreement that all educated persons should have in common a certain body of knowledge, but, at least in the arts colleges of state universities, there are 3 reasons why it is difficult to organize the program of general education. They are: (1) The arts college is a

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service college to the professional schools on the same campus. This leads to the introduction of specialized and, too often, diluted courses. For instance, into chemistry and bacteriology come special courses for students in home economics and agriculture, into physics come courses of more practical content for engineering students, and even courses in freshman English must sometimes be adapted for future engineers, bankers, etc. (2) The graduate program with its requirement for research, some graduate teaching for undergraduate instructors, and emphasis on the sequence of courses and prerequisites, means a departmentalization and specialization which produces a looseness in the arts college curriculum. (3) Lack of cooperation and correlation of secondary schools becomes evident when an arts college tries to do something about giving a "liberal education." Attitudes in secondary schools which hold that a student should not be required to study a subject that is not a "tool" to a particular vocation; or, that a student should not be required to study a subject he does not like, are detrimental. The latter has resulted in courses formerly given at the high school level being transferred to college. Either attitude may result in a college student who finally decides to be a chemist, doctor, or engineer, discovering that because he has had no mathematics above arithmetic his preliminary preparation is inadequate.

The American Diet and Vitamin B_1

In all probability the present shortcomings of American dietaries with respect to vitamin B_1 content have not developed suddenly but are the result of a gradual change proceeding over a period of years. The food statistics that have been reviewed indicate that the per capita consumption of sugar has grown steadily for a century and has remained fairly uniform at a high level for only a few years. Such an increase has undoubtedly operated gradually to diminish the vitamin B_1 of our dietaries. The effect of the developments in wheat milling has been most pronounced since about 1870, with the highly refined wheat flour steadily gaining in use and popularity. I have not been able as yet to secure suitable American data on which to base calculations expressing more precisely this downward trend in B_1 content of dietaries in the United States. However, the conditions in this country have probably been fairly similar to those in England, particularly as affected by the growth of the sugar industry and the changes in the milling of cereals, the two dominant factors under consideration.—*Cowgill, G. R.: The Need for the Addition of Vitamin B_1 to Staple American Foods, J. A. M. A., 113: 2146, 1939.*

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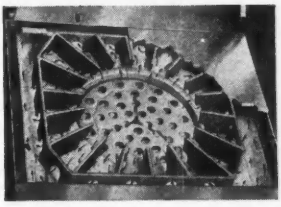

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See the fins and ducts in the illustration? We've cut away the top to show how they'll cut away at your operating costs. They add 68% to the heat absorbing surface. They direct the flue gases radially, distribute the heat more uniformly, more widely.

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NEWS NOTES

American Home Economics Association. The thirty-third annual meeting will be held in Cleveland, June 23–27. This organization, founded in 1908, now has over 12,000 members scattered through 51 affiliated home economics associations in the United States, Puerto Rico and Canada, and about 1700 affiliated home economics student clubs in colleges and high schools. Dr. Helen Judy Bond, head of the Department of Household Arts and Science at Teachers College, Columbia University, is president of the association.

Co-chairmen of the local committees are Dorothy Ellen Jones, supervisor of home economics in the Cleveland public schools, and Helen Robertson of the Cleveland *Plain Dealer*. Working closely with them are Mrs. Helen Mougey Jordan, a member of the faculty at Flora Mather College, Western Reserve University, and president of the Ohio Home Economics Association, and Maude Hawkins, teacher at the Collinwood High School, Cleveland, and president of the Cleveland Home Economics Association. Elizabeth Dyer of the University of Cincinnati is chairman of the program committee.

At the first general meeting, which will be open to the public, Professor T. V. Smith, University of Chicago, and congressman-at-large from Illinois, will speak. Another general meeting will include a symposium on "The Family and Social Changes" in which several prominent Ohioans will take part.

Group meetings will be arranged for members especially interested in the recognized divisions of the home economics field: family relationships, family economics, housing and household management, food and nutrition, and textiles and clothing. Commercial exhibits and those of government and professional groups with aims akin to those of home economics and exhibits showing the work of departments, divisions, and committees of the association will also be featured.

The Hotel Statler will be headquarters, except for student club representatives. College clubs will have their headquarters at the Carter Hotel and high school clubs at the Allerton Hotel.

Further information may be obtained from association headquarters, 620 Mills Building, Washington, D. C.

Enrollment of Dietitians for Army Service by the American Red Cross. Since 1917 the Red Cross has directed the enrollment of a reserve group of dietitians for Army, Navy and Red Cross service. According to Melva Bakkie of the American Red Cross, the Army has recently requested that male dietitians be included as indicated in the following requirements for registration. It may be pointed out that these requirements as to age and marital status will eliminate a large number of dietitians already enrolled for service with the Army but will not affect their eligibility for Red Cross service.

It should also be pointed out that qualified male dietitians in the Army will receive a non-commissioned rank of technical sergeant. Qualified women will be employed as civilians. All will be classified in a group termed "medical technologists." All dietitians interested in such enrollment are requested to write to the American Red Cross, Washington, D. C., for the necessary application blanks. The requirements for registration follow:

1. Men or unmarried women.
2. Graduation from a 4-year course in a recognized college or university giving an accredited course for profession of dietitian with degree of B.A. or B.S., majoring in dietetics.
3. Completion of a course in applied nutrition in a recognized training school approved by the American Dietetic Association or 2 years' experience in the practice of dietetics acceptable as an equivalent to applied nutrition in a recognized training school approved by the American Dietetic Association.
4. Favorable recommendation from the director of the institution in which experience was obtained.

Civilian employee—$1620 yearly; $480 per year deduction for quarters and rations.

Dietitians must meet following general qualifications:

1. Citizens of the United States.
2. Between ages of 21 to 45 years for the Army. (The Navy does not want dietitians).
3. Physically qualified. All applicants must submit a report of physical examination with the application for enrollment.

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4. All female applicants must be unmarried.
5. All applicants must express a willingness to serve as dietitian in time of national emergency.

Journal Editor Ill. As this JOURNAL goes to press, its editor, Mrs. Huddleson, is confined to the Stamford Hospital with pneumonia.

Ina Lindman of the United Fruit Company. The Women's Activities page of the New York *Times* for Sunday, February 11, carried an interesting story concerning the work of Ina Lindman, the only woman executive of the United Fruit Company.

Meeting of International Conference on Nutrition of the League of Nations. Hazel K. Stiebeling, senior food economist, U. S. Department of Agriculture, Bureau of Home Economics, Washington, D. C., represented the United States at this meeting held at the National Institute of Nutrition, Buenos Aires, under the chairmanship of Professor Escudero, director of the institute. Since returning to the States, Dr. Stiebeling received a letter from Professor Escudero in which he comments as follows: "As a consequence of the conclusions reached in the Third International Conference on Nutrition, the President of our country has created 22 Latin-American scholarships, for different countries of our continent. These scholarships offer a home, studies, clothes and elements of work, and books, free of charge; they last 3 years and enable the students to follow the career of dietitian. The Institute would receive under the same conditions established for the Latin-American bursaries, the pupils from your country who would wish to study in our school, or the dietitians desiring to know our organization. Application should be made through the American Dietetic Association or the American Home Economics Association. We would consider it a great honor if any of the teachers of your country wished to explain his ideas in our lecture room, and in that case we should take corresponding steps."

New York Diabetes Association, Inc., under the auspices of the Committee on Diabetes Clinics, held an open meeting on March 21 at the New York Academy of Medicine, Dr. Charles M. Levin, presiding, with the following program: Dr. George E. Anderson, chief, Diabetes Clinic, Brooklyn Hospital, "The Diabetic Diet in Retrospect"; a discussion by Dr. Frederick M. Allen, Department of Medicine, Polyclinic Hospital; and a presentation of the practical aspects of dietary application, by two members of the Greater New York Dietetic Association, Frances MacKinnon of New York Hospital and Anne Gibbons of Bellevue Hospital.

Special Libraries Association. The thirty-second annual convention will be held in Indianapolis, June 3–6, with headquarters at the Claypool Hotel. The association is a national organization whose membership is drawn from institutions or firms maintaining special libraries or research departments, such as business branches and specialized departments of public and university libraries, museums, hospitals, and from other fields of business, science, technology, social welfare and the arts. Membership in the organization now totals approximately 2200. "Utilization of Resources", theme of the convention program, is tied in with the association's slogan, "Putting Knowledge to Work."

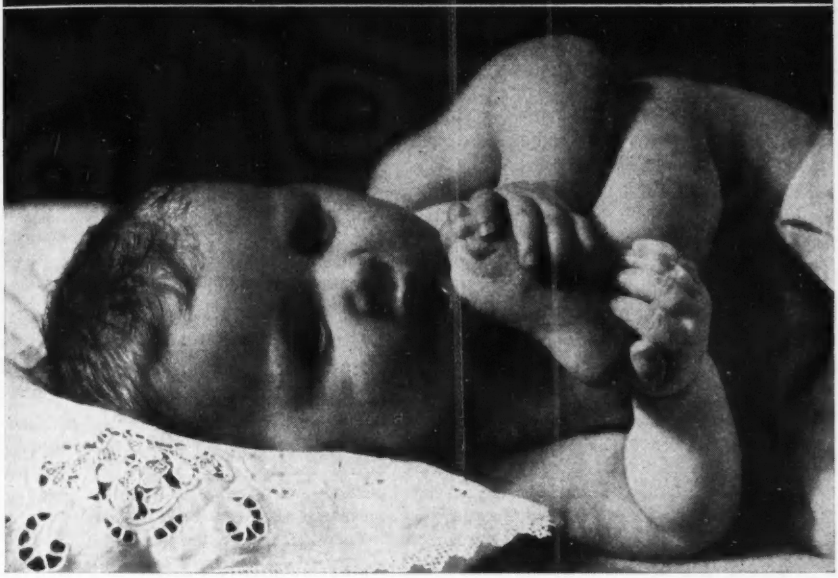
California Dietetic Association. Officers of the Los Angeles section for 1939–1940 are: chairman, Elsie Jo Nelson; vice-chairman, Elvera Anderson; secretary-treasurer, Clancy Morrison.

On January 6 the southern section held their monthly dinner meeting at the Mona Lisa Restaurant. Following the dinner, Miss Anderson introduced Dr. Esther Nelson, whose subject was "Pre- and Post-Operative Diets." Dr. Helen Thompson of the University of California, Los Angeles, and a member of the California Dietetic Association, spoke on "Recent Research in Vitamins."

A discussion on incorporation of the California Dietetic Association followed but the idea was eventually dismissed. Dr. Verz Goddard reported on the 1939 yearbook of the U. S. Department of Agriculture, entitled "Food and Life." Committees to work on various exhibits for the American Dietetic Association were appointed by Katharine Brown, national vice-president.

The February 5 meeting was held at Katie Kohn's Restaurant and the speakers were Mr. Strohen of the Dohrman Hotel Supply Com-

Are fortified cereals a satisfactory source of iron for infants?



Experiments on the availability of iron in fortified cereals were recently concluded on infants in a well-supervised nursery. These experiments indicated that "New 5-Minute" Cream of Wheat fed to infants between three and five months of age as their first soft-solid food, acted as a satisfactory source of iron. This was judged by the reticulocyte response by the seventh to tenth day after this feeding was begun, as well as by the increase in erythrocyte and hemoglobin levels.

In addition, it was found that the iron of "New 5-Minute" Cream of Wheat is essentially as available as medicinal iron. The report* concluded that "New 5-Minute" Cream of Wheat should be of benefit in the prevention of, as well as relief from, iron deficiency anemia, which is so commonly present in infants after the third month of life.

Besides iron, "New 5-Minute" Cream of Wheat has added phosphorus, calcium, and Vitamin B_1. It also has a somewhat richer flavor than "Regular" Cream of Wheat, a cereal which has been recommended by many physicians for 45 years. It cooks to full digestibility — even for infants — in only five minutes of boiling. No increase in price. Both "New 5-Minute" Cream of Wheat and "Regular" Cream of Wheat are available at most food stores.

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PHOSPHORUS	118.0 milligrams
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pany, who discussed the latest developments in equipment; Mr. Minium of S. and W. Foods, who reported on various canned foods, including many new products; and Dr. Mallan who reviewed "Accepted Foods and Their Nutritional Significance", published by the Council on Foods of the American Medical Association.

A joint meeting of the southern section of the Home Economics Association and the Los Angeles section of the California Dietetic Association was held February 10 at the California Lutheran Hospital. Fifteen dietitians gave 10-minute talks on: prerequisites for applicants; a dietitian's day—in private hospitals, public hospitals, public health service, state institutions, children's hospitals, clinics, and as a consultant dietitian; dietetics as it applies to home living; and professional activities of the California Dietetic Association. A luncheon followed at the California Hospital, where Dr. Goddard gave a short talk on "New Vitamin Terminology." The Los Angeles Hospital was visited in the afternoon, Marjorie Janssen acting as hostess.

Elizabeth Gibson, Huntington Memorial Hospital, Pasadena, returned recently from a trip to Guatemala.

Mrs. Grace Gallway Hargraves resigned her position at the Children's Hospital, Los Angeles, January 1 and is now nutritionist for the Morning Milk Company.

Leona Mae Eads is now dietitian in the Out-Patient Department, and supervisor of formula, laboratory and tray service, at the Children's Hospital, filling the vacancy left by Mrs. Hargraves.

On Christmas Day, Frances Bathern of Community Hospital, Long Beach, became Mrs. Halsted. Marion Vye has replaced Mrs. Halsted at the Community Hospital.

Mildred Carlson of Santa Monica is doing private consultant work in that city.

Elsie Jo Nelson and Lucile Stout were speakers at the Western Conference of American College of Surgeons, held at St. Vincent's Hospital, Los Angeles, in January.

Helen Hawver, formerly of Henry Ford Hospital, is now dietitian at the General Hospital, Santa Barbara, and Helen Ferguson is now at Alameda County Hospital in San Francisco.

Natalie Van Cleve, formerly chief dietitian at Alameda County Hospital, has accepted a position at the University of California Clinic in San Francisco.

Ann Hanten has retired, and Edith Ukella, formerly of the University of California Hospital, has taken the position of dietitian at Mary's Help, San Francisco.

Werra Fenley, dietitian at the East Oakland Hospital, Oakland, was married in December to Mr. James Branmoeller of the same city.

Esther Wax, formerly of the Seaside Hospital, Long Beach, was married on February 3 to Mr. Seymour Schwartz and is living in Nevada.

Miss Downer is the new assistant at St. Vincent's Hospital, Los Angeles. Miss Botz is now dietitian at the Wilshire Hospital.

The dietitians of San Diego County sponsored a dinner in January to hear Mrs. Grace V. Merrill, head of the Union Pacific Dining Car Service, speaking on "Women's Frontier." Members of the Home Economics Club and various business and professional women's clubs were invited.

Officers of the Santa Barbara section for 1939-1940 are: chairman, Marie Ferguson; vice-chairman, Theodora Corey; secretary-treasurer, Martha Larsen Smith.

The January meeting was held at the Santa Barbara Clinic. After the business meeting cardiac and allergy diets were discussed, and methods and materials in regard to a chart for calculating vitamin content of foods.

The February meeting was held in the office of Irene Fagan, county home demonstration agent. Lucile Hall presented a report by her committee on the review of material covering the Registered Dietitians Act. At the midyear council meeting it was voted to continue the work on this act.

The Bay section met at the University of California Hospital in San Francisco for the January meeting. Dr. Mayo Soley discussed anxiety states and the resulting hyperventilation due to stimulation of the sympathetic nervous system.

The February meeting was held on the campus of the University of California. Reports were presented on research work in nutrition being done by Dr. Agnes Fay Morgan.

In March the members met for a dinner meeting with the H.E.W.I.B.S at the Women's City Club in San Francisco.

A meeting to discuss purchasing problems is planned for April, a field trip, possibly on a Matson Line steamer has been suggested for May, and a barbeque dinner at Fairmont for June.

1 **Here in Hawaii** nature has assembled, in perfectly balanced proportion, sunshine, rain, and warm, rich earth to produce the world's most luscious and perfect pineapples.

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The northern midyear council meeting was held February 13 in San Francisco and reports from all committees were read.

Mrs. Evelyn Mueller was appointed convention chairman to fill the vacancy of Mrs. McCarthy.

The southern midyear council meeting was held at the Ambassador Hotel, Los Angeles, February 17. Reports from all committees were read and matters to be presented by Katharine Brown to the national Executive Board were discussed.

Maryland Dietetic Association. The February meeting was held in the new Eastern High School Cafeteria. Round table discussions had been previously organized by the sectional chairman, and each group had an interesting meeting.

Katherine Allen, executive housekeeper of the Emerson Hotel, spoke to the Administrative Section on choosing and training personnel in housekeeping duties.

There were 3-minute discussions on general cleaning, dish sterilizing, household pests and their extermination, employee manuals and work sheets.

Dr. Lewis Gundry, associate professor of medicine, University of Maryland, conducted for the Diet Therapy Section a very interesting discussion of recent discoveries in diabetes.

The Community Education Section heard a most informative report on the work of Katherine Leamy, state nutritionist, and Mrs. Mildred Drury of the Eastern Health District.

The Maryland Dietetic Association was invited to attend a dinner meeting given jointly by the Washington Dietetic Association and the Home Economics Association on Thursday, February 15, at the Dodge Hotel, Washington, D. C.

Mary Barber was the speaker and a delightful evening was spent meeting members of the Washington association. Those attending from Baltimore were Alma Bering, Alice Jané, Josephine Anderson, Margaret Pollard, L. Anderson and Helen Schmidt.

Sarah Tweed has resigned as assistant administrative dietitian at the Johns Hopkins Hospital to take charge of the food service at the Western Maryland College in Westminister, Maryland.

Hazel Benson has been appointed dietitian at Coaldale State Hospital, Coaldale, Pennsylvania.

Linnea Anderson has been appointed assistant ward dietitian at the Johns Hopkins Hospital.

Edith Manford has been appointed dietitian in charge of the Nurses' Dining Room at the Johns Hopkins Hospital.

Eleanor Cruikshank, having completed her postgraduate course at the University of Maryland Hospital, has accepted the position of dietitian at the West Baltimore General Hospital.

Massachusetts Dietetic Association. The February meeting of the Massachusetts Dietetic Association was a dinner party held in the new Pay Cafeteria of the George Robert White Memorial Building of the Massachusetts General Hospital, Boston. Marion D. Floyd, chief dietitian of the hospital, acted as hostess. After dinner, which was served by the student dietitians of the Massachusetts General Hospital, there was a short business meeting. The first speaker on the program was Mr. Raymond V. Kinsman, superintendent of works at the hospital, who discussed "Maintenance of a Dietary Department". This was followed with an explanation by Miss Floyd of the arrangement and selection of equipment and the development of floor plans in the White Building.

All of the new kitchens and dining rooms were then opened for inspection by members of the association and their guests. Dietitians from the Massachusetts General Hospital, acting as guides, took the members through the new setup and answered all questions concerning it.

The Massachusetts Public Health Association celebrated its golden anniversary in Boston on January 27. It was voted at this time to establish a new section to be called the "Food and Nutrition Section".

Ruth L. White of the Forsyth Dental Infirmary spoke recently on the subject "Food and Its Influence on the Teeth" in a series of Sunday afternoon health lectures given at the Quincy Hospital.

A short course on the "Psychiatric Approach in Health Teaching" has recently been organized by the Social Welfare and Public Health Section of the Eastern Massachusetts Home Economics Association for a small group of nutritionists in Boston and vicinity. Bernice Blackman, chief of the Social Service Clinic of the Judge Baker Guidance Center, was asked to give this course.

A one-dish breakfast abundant in nutrients

The wide range of nutritional values in the combination of whole wheat, milk and fruit makes this one-dish breakfast an adequate morning meal for most normal people. It consists of National Biscuit Shredded Wheat, milk and sliced bananas or other fruit.

National Biscuit Shredded Wheat is whole wheat with nothing added. In two of the biscuits plus a cupful of milk, the following nutrients are *naturally* present:

CARBOHYDRATES. Our product is 77% carbohydrates. Milk has about 5%.

PROTEIN. Our product is 10% protein. Milk has over 3%.

IRON. Our product is an excellent source, with .0034%. Milk has .0002%.

CALCIUM. Our product has .04%. Milk has .12%.

PHOSPHORUS. Our product has an excellent content, .42%. Milk has .09%.

VITAMIN B_1. Approximately 120 Sherman-Chase units in two biscuits. One cupful of milk adds approximately 77 Sherman-Chase units.

VITAMINS A and G. Our product gives these vitamins in lesser quantities. Milk is rich in both of them.

ENERGY. In two biscuits and one cupful of milk are approximately 370 calories.

With the addition of a sliced banana, of course, Vitamins A, B_1, C and G, and extra iron and carbohydrates are added.

To the majority of tastes this simple breakfast, hearty but not heavy, has a pleasing appeal. And its hunger-staying qualities, with its needed minerals and vitamins makes it widely acceptable as a well rounded morning meal.

The clean, toasted flavor of National Biscuit Shredded Wheat makes it useful in encouraging increased intake of milk which, according to surveys, is far below the nutritionally desirable level in many families.

Through more than forty years in millions of homes, billions of breakfasts of National Biscuit Shredded Wheat have been enjoyed.

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Dorothy McLaughlin has accepted the position of assistant administrative dietitian at the General Hospital, Maine. Miss McLaughlin was formerly assistant dietitian at the Lynn Hospital, Lynn, Massachusetts.

New Jersey Dietetic Association. The Community Education Section, under the chairmanship of Alberta Dent, held a luncheon meeting on February 1, at which plans for the year were discussed.

On February 5 members of the state association were entertained at the Presbyterian Hospital, Sarah Benedict acting as hostess. Major Charles E. Russell, formerly of the United States counter-espionage service during the Boxer Rebellion, the Philippine Insurrection, the Spanish War and the World War, delivered an interesting address on "Heroes Among the Spies."

On February 15 the executive committee met for dinner and a meeting at the Tavern in Newark, and plans for the spring and fall meetings were discussed.

A symposium on "Teaching the Student Nurse" was given for the spring institute of the League of Nursing Education, on February 28 at the Newark Academy of Medicine. Members participating were Sophia Morris, Juanita Trapp, Geraldine Parry, Elizabeth Rupert and Winifred Cushing.

Elizabeth Rupert was a guest speaker, representing the New Jersey Dietetic Association, at the annual alumnae meeting of the Home Economics Department, New Jersey College for Women, New Brunswick. A delightful program was arranged by Mrs. Helen Hazen, honorary member of the New Jersey Dietetic Association. Graduates in the field discussed "Teaching Home Economics to High School Boys"; "My Experience as a Dietitian in a State Mental Hospital and in a Home for Incurables"; and "The Dietitian in the School Cafeteria." A buffet supper was served in the lovely old dining room of Woodlawn, the former home of Mr. and Mrs. Nelson, which has been given to the alumnae of the New Jersey College for Women.

Annette Zelzer, assistant dietitian, Beth Israel Hospital, Newark, has accepted a position with the Prudential Insurance Company, Newark.

Virginia Cheney, formerly with the Extension Service in Mercer County, is now editor of the Woman's Page of the Philadelphia *Inquirer*.

Aulay Frizzell, assistant dietitian, Hackensack Hospital, has announced her engagement to Dr. Samuel Reich of Cradell, New Jersey.

Greater New York Dietetic Association. Preceding the annual meeting at the New York Academy of Medicine on February 7, where Dr. Cyril N. H. Long, Sterling professor of physiological chemistry at Yale University, gave an address on "Recent Research on the Control of Metabolism by the Endocrine Glands", the speaker was honored at a dinner given by the executive committee of the association at Hampshire House, New York. Invited guests included Drs. R. K. Cannan, E. H. Corwin, H. Rawle Geyelin, Robert F. Loeb, David Marine, Claude W. Munger, H. O. Mosenthal, H. B. Richardson, James Ralph Scott, and Ephraim Shorr, all of New York; Captain Harry W. Warfield, superintendent, St. John's Riverside Hospital, Yonkers; and Dr. Hazel Munsell, Mrs. Long, Mrs. Cannan, Mrs. Mary P. Huddleson and Eleanora Sense. The president, Elizabeth Cole, and vice president, Mary Ruth Curfman, presided at the meeting in Hosac Hall of the New York Academy of Medicine following the dinner, Miss Curfman introducing the speaker. Dr. Long reviewed the recent work that has led to a wider appreciation of the manner in which metabolism is regulated by the endocrine glands and presented an outline of the main features of metabolism in relation to endocrine activity, illustrated with lantern slides and a motion picture.

This annual feature was initiated in 1930 with an address by Dr. Lafayette B. Mendel on "Some Chemical Aspects of Nutrition" with discussions by Drs. Eugene F. Du Bois, Graham Lusk and Henry C. Sherman. More recent speakers have been Dr. George R. Cowgill, "The Vitamin Requirements of Man", 1937; Dr. John R. Murlin, "Vitamins and Hormones", 1938; and Dr. Walter B. Cannon, "The Importance of Emotional Attitudes for Good Digestion", 1939.

Oklahoma Dietetic Association. The third annual meeting is being held at the Skirvin Hotel, Oklahoma City, on April 5-6. Freda Schroeder Johnson, president, presides at the opening session, introducing Mayor Robert A Hefner of Oklahoma City, who welcomes the

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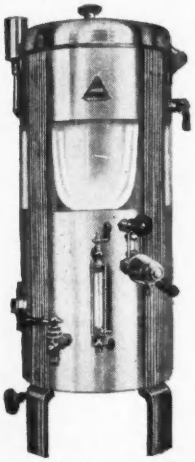

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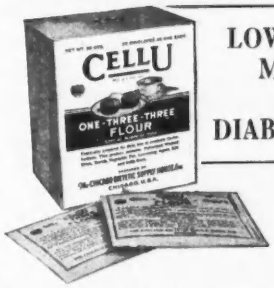

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delegates, and Dr. John R. Abernathy who gives the invocation. J. Marie Melgaard, chief dietitian, State University Hospital, is chairman of the Friday afternoon session. An interesting program is being presented by the following speakers: Dr. Marietta Eichelberger, director of Nutrition Service, Evaporated Milk Association, who speaks on "The Importance of Economical Milk in Human Nutrition"; and Mrs. Grace V. Merrill, supervisor of Dining Service, Union Pacific Railroad Company, who speaks on the topic "Woman's Frontier". This is to be followed by a supper Friday evening for all the delegates, the entertainment being furnished by the Oklahoma City Dietetic Association.

The nutrition forum, an open meeting to gain the interest of various women's clubs in Oklahoma City, convenes Friday night at the Skirvin Hotel. Maxine Turner, state nutritionist, is to introduce the speakers and talk on "Fads and Fables about Food". Other speakers are: Dr. Carrol M. Pounders, "Your Child's Health"; Mrs. Nell Evans, "What To Eat and Why"; Dr. Bert Keltz, "Weight Control is Self Control"; and Mrs. Muriel Nelson, "Thrifty Meals". The motion picture "More Life in Living" is to be presented and also a skit by the student dietitians at University Hospital and Saint Anthony's Hospital. There are various attractive food exhibits, posters, and charts, to interest the lay person.

At the Saturday morning session, with Dr. Daisy I. Purdy, Oklahoma A. & M. College, presiding, Mary I. Barber, president-elect of the American Dietetic Association, is to address the members and guests. Mrs. Lola Heuerman Janis, assistant professor of household science, Oklahoma A. & M. College, is to speak on "The Administrative Dietitians' Training Course of Oklahoma Agricultural and Mechanical College"; and Mr. Cecil Roberts, Poultry Husbandry Department, Oklahoma A. & M. College, is to discuss "Market Grades of Poultry and Eggs". The "get-together" buffet luncheon Saturday noon gives the members an opportunity to meet the national speakers and guests.

Dr. Helen Burton, director, School of Home Economics, University of Oklahoma, is presiding officer of the Saturday afternoon meeting and the following program is being presented: Dr. Gertrude Nielsen, "Commercial Vitamin Products", and Laura A. Miller, associate professor of home economics, University of Oklahoma, "Recent Findings in Nutrition Research." Following this session Freda Schroeder Johnson, president, presides at the annual business meeting which includes the election of officers and presentation of reports by section chairmen. The annual banquet is being held in the Crystal Room of the Skirvin Hotel, Saturday evening.

Mrs. Margaret Durrett and Mrs. Owen Royce were in charge of the February meeting of the Oklahoma City Dietetic Association at St. Anthony's Hospital. Dr. William K. Ishmael discussed "Diet and Arthritis." Afterward the members were entertained with a film, "How To Remember Names and Faces".

Mary Moran, assistant dietitian at Saint Anthony's Hospital, was married on January 27 to Mr. Thomas A. Sellers. Mr. and Mrs. Sellers are making their home in Oklahoma City and Mrs. Sellers is continuing her work at the hospital.

Helen T. Smith, former student dietitian at the University Hospital, has accepted the position of assistant dietitian at the Nashville General Hospital, Nashville, Tenn.

Juell Little completed her dietetic training at Saint Anthony's Hospital in January, and is now at the University Preparatory School and Junior College, Tonkawa, Oklahoma.

Rhode Island Dietetic Association. At the February meeting, following dinner at the Plantations Club, Margaret Gillam spoke on "Dietary Administration." The meeting was open to all hospital administrators, and six hospital staffs were represented, including three of the leading superintendents in the state, Dr. Ruggles of Butler Hospital, Dr. Cox of Woonsocket and Mr. Carl Lindblad of the Homeopathic Hospital. A question period followed, with many taking part.

The speaker for the March meeting was Elizabeth C. Nickerson, director of nutrition, Bureau of Public Health Instruction, Hartford, and her subject: "Nutrition of the Unemployed and Low Income Groups." Representatives of the professional staffs of the State Departments of Health, Labor and Social Welfare attended.

As reported in the Providence *Evening Bulletin*, Mrs. Jarvis D. Case, home economist with the Providence Family Welfare Society, has been appointed nutritionist in the Child Hygiene Division of the State Department of

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Health. This position has been newly created and the work will form a part of the state's child health program. The appointment was made by Dr. Lester A. Rounds, State Director of Health. Through five years association with the Family Welfare Society, Mrs. Case, a member of the A. D. A., has achieved a wide reputation for her work in budgeting the food for low-income families and at the same time providing them with those foods having the highest nutritional value. She has written and published a number of pamphlets on low-cost food and nutrition which have been widely distributed throughout the country. Mrs. Case is president of the Rhode Island Nutrition Association, and the wife of Dr. Jarvis Case, well-known Providence physician.

South Carolina Dietetic Association held the third annual meeting February 23–24, at the Jefferson Hotel, Columbus. The opening session included a business meeting and the following program: "The Future of Home Economics in South Carolina", Sara E. Cragwell, head of the Home Economics Department of Winthrop College; "The Dietitian from the Standpoint of the Hospital Administrator", Mr. Charles H. Debbs, president of South Carolina Hospital Association; "The Dietitian from the Standpoint of the Medical Staff", Dr. Eugene Zemp, chief of the medical staff of Columbia Hospital.

The annual banquet was held jointly with the South Carolina Home Economics Association in the ballroom of the Hotel Jefferson.

The following program was presented at the final session on February 24: "Where Do We Go From Here", Margaret Cowden, treasurer of the American Dietetic Association; "The Stamp Plan in Relation to Nutrition", Mr. Acey Carraway, representative of the Federal Surplus Commodity Corporation; and a round table discussion led by Miss Cowden. A trip through the new Swift's Branch House in Columbia and an informal luncheon brought the meeting to a close.

The report of the membership committee shows 13 new members added during the year with a possibility of several more applications being received soon. Thus the membership has doubled since the annual meeting of 1939.

Tennessee Dietetic Association held the sixth annual meeting February 10 in Chattanooga. Among the speakers were Dr. James S. McLester of the University of Alabama, and Dr. Philip M. Livingston, whose subject was "Health and Diet."

The Memphis Dietetic Association recently sponsored a Refresher Course in Diet Therapy, under the leadership of Fairfax T. Proudfit, honorary president of the Tennessee Dietetic Association, assisted by specialists on various diseases. The course was a great success and plans have been made for a yearly renewal.

Texas Dietetic Association. At the dinner meeting of the Dallas Dietetic Association at Hotel Stoneleigh, January 8, Mr. Raymond Duvall, credit manager of the Borden Company, Dallas, assisted by Mr. Bob Hogg, grocery sales superintendent of Standard Brands Inc., Dallas, presented two sound films: "Borden Fifty Years" and "How to Remember Names and Faces."

A son, Michael Donovan, was born December 23, 1939, at Florence Nightingale unit of Baylor University Hospital to Mr. and Mrs. Carlton Lawler.

Four members appeared on radio programs recently. Doris Leggit and Orene McClellan, county demonstration agents, spoke over KRLD January 6 on "The Business of Being a Rural Home Maker." This program was sponsored by the Dallas Business and Professional Women's Club. Rose Richter, chief dietitian of Methodist Hospital, appeared on a radio program of that club on December 30. Rosa Spearman, supervisor of Dallas Public School Lunchrooms, was interviewed over Station KGKO during the Woman's Hour in December. She is author of an article in the November issue of *Nation's Schools*, entitled "Laying Out School Lunchrooms."

Mert McCollum is dietitian of a new cafeteria at the Crawford Hotel, Big Springs, Texas. Eula Willis will join her soon as assistant.

Marjorie Roberts, chief dietitian of the Public Health Hospital of Fort Worth, recently accepted the position of chief dietitian at the new Marine Hospital in Boston. Mary Carey is now chief dietitian at the Public Health Hospital in Fort Worth and Miss Tucker is her assistant. Both were transferred to Fort Worth from another public health hospital in Kentucky.

Rosa Spearman opened two new lunchrooms in January. One is in the new Alex Spence

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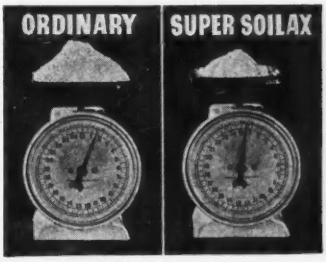

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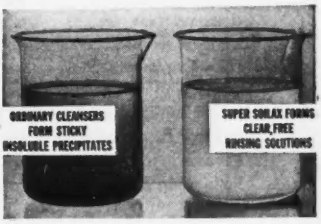

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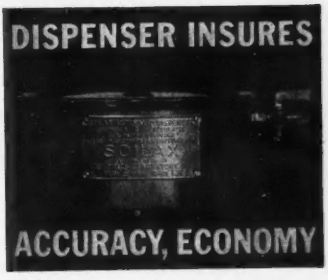

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School, the other in the new W. E. Green School. This makes a total of fifty-nine Dallas public school lunchrooms under her direction.

The local program committee presented Mrs. Reba Jane Douglas, owner of "Flower A Day Shop", Dallas, at the February 12 Valentine Party of the Dallas Dietetic Association in the blue room at Hotel Stoneleigh, Rose Richter, president, presiding. Mrs. Douglas gave an illustrated talk on flower arrangements using cut flowers and pottery figures. Her talk included the history of flower arrangements, stressing the work of the Japanese and adaptations of their designs. Delicious refreshments were served from elaborately decorated tables. Fifty-five members and guests were present.

Virginia Dietetic Association. Aileen Brown, director of dietetics at the Medical College of Virginia, was granted a fellowship by the Fellowship Board of Rockefeller Foundation for a year's study at Columbia University. Kathryn Heitshu is acting director during Miss Brown's absence. Elizabeth Burruss is taking Miss Heitshu's place as therapeutic dietitian. Caroline Wallace has resigned as assistant dietitian at the Medical College of Virginia.

Mary Pullen and Eleanor Wolfe, former students at the Medical College of Virginia, have returned to accept positions. Miss Pullen has accepted the position made vacant by Miss Wallace's resignation. Miss Wolfe will be assistant to Miss Burruss and will take charge of the Milk Laboratory.

The executive committee of the Virginia Dietetic Association met February 24 at the Hotel John Marshall in Richmond. At this meeting plans for the annual convention were discussed. Bertha Ide, Norfolk General Hospital, is in charge of the program. The meeting will be held April 26-27 at the Cavalier Hotel, Virginia Beach.

Margaret Fitzhugh, treasurer of the state association, spoke at the state meeting of the Virginia Home Economics Association in March.

Helen Lynch has accepted the position of chief dietitian at Stuart Circle Hospital in Richmond. Miss Lynch comes to Richmond from Pinehurst, N. C.

News from our Advertisers and Exhibitors. Patricia Collier, home economist, *Hawaiian Pineapple Company, Ltd.*, is now distributing a "Home News Bulletin" filled with suggestions for a variety of interests to all concerned with menu-making.

The food editor of *Hospital Management* comments in the January issue as follows, concerning Cal-C-Tose, a product of *Hoffmann La Roche, Inc.*: "Do you crave new ideas for the patient who 'grows thinner by the minute'? Try Cal-C-Tose instead of your routine milk drinks and combinations. My patients, especially those orthopedic cases who are weary of it all, relished this preparation when served with cookies or sandwiches. They wanted more, especially when I concocted a frosted drink or incorporated this product in an eggnog. The anemia cases look forward to this treat, too, and it has been a reward for taking the other 'high iron' foods which they do tire of even though the foods have been dressed up."

The *Maltex Company, Inc.*, through their home economist, Mary Pearl, is distributing recipes in the convenient card index form, for institutional use.

R. B. Davis Company. Findings in a nutrition study of camp children as reported by Shirley Wilmott Wynne, M.D., and presented in *Archives of Pediatrics*, 56:699:702, November 1939, were as follows: Fifty undernourished and underprivileged children, selected at random by various hospitals in New York City, were sent to camp for the purpose of determining the nutritive value of vitamin-mineral fortified malted food drinks. Before going to camp the children were given complete physical examinations; blood counts and hemoglobin determinations were done. The groups were divided into two groups, as similar as possible, according to general body habitus. A malted food drink (Cocomalt) was added to the diet of the children in group A, while those in group B received the same diet but without the malted food drink. An analysis of the results revealed the following facts:

	Group A	*Group B*
Average Gain	2.46 lb.	1.9 lb.
Average Loss	1.25 lb.	2.37 lb.
Hemoglobin and Red Cell Count Improved	28%	16%
Hemoglobin Increased	36%	32%
Red Cell Count Increased	56%	40%

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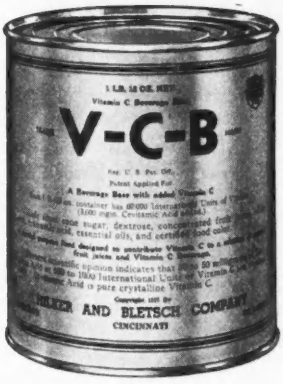

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Among the children receiving Cocomalt in addition to the regular diet, two gained 2 lb. and 6½ lb. respectively, whereas in the control group the greatest gain was 4 lb. This gain in weight and improvement in the blood picture would seem to indicate that the addition of the vitamin-mineral fortification to the regular diet was of value. It was the only factor in the experiment which varied in the two groups. Had not all the children been receiving an optimum diet and enjoying a healthful environment, it is quite possible that the addition of the malted food drink would have, by supplementing an inadequate diet, brought about greater improvement. These children will be reexamined at the end of six months to determine if there have been sustained benefits.

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Much time can be saved and greater unity of products guaranteed if one person weighs, measures, and assembles all ingredients for the recipe. The material, correctly weighed or measured, for each recipe (with the exception of milk, butter, etc., which must be left in the refrigerator until used) may be assembled, and placed on a tray accompanied by the recipe card. The cook needs only to combine the ingredients according to the accepted method.

Adhesive tape makes durable and inconspicuous labels for cupboard and refrigerator doors. Cut tape the desired size, place on paper, and letter on typewriter. Remove paper and stick on door. Brush with clear shellac and the entire surface can be washed many times without affecting the labels.

Recipe guards: Recipe cards can be protected inexpensively by washing discarded x-ray films with hydrogen peroxide or by long soaking in water, cutting them into appropriate shapes and stapling them over the cards.

One of the simplest methods of cutting hot brown bread is to place an ordinary string around the loaf at the desired thickness, cross the ends of the string and pull with both hands. This insures minimum crumbling and crushing of the hot bread.

Discarded cotton or linen drapes of striped or simple all-over design may be made into attractive tray-mats or table-place mats if the material is still firm and the colors are distinct and pleasing.

To avoid scouring pans on which food has been burned or become dry, place the pans in the steamer for a few minutes. This will moisten and loosen the food in a short time and its removal will be easy.

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* These are reports of separate problems which have never appeared in the JOURNAL but have been printed for distribution.

WHO'S WHO IN THIS ISSUE

Quindara Oliver Dodge is associate professor, Institutional Management, and director, Vocational Practice, Simmons College; and director, Vocational Training Department, Women's Educational and Industrial Union, Boston. Mrs. Dodge is also director of one of the five administrative courses for student dietitians now approved by the American Dietetic Association.

Arlien Johnson, A.B., Reed College, M.A., Columbia University, diploma, New York School of Social Work, and Ph.D., School of Social Service Administration, University of Chicago, has had a long and varied experience in the field of social service. During the World War she was in the Industrial Department of the War Work Council and the National Board of the Y. W. C. A. Later, Dr. Johnson was an associate in the Department of Sociology, University of Washington, acting executive secretary of the Seattle Community Fund, assistant director of the Washington Emergency Relief Administration, and director of the Graduate School of Social Work, University of Washington. At present she is dean of the Graduate School of Social Work, The University of Southern California, Los Angeles. Among her several professional associations Dr. Johnson is first vice-president of the National Conference of Social Work. She is the author of *Public Policy and Private Charities*, and of other publications concerned with her work.

T. Addis, M.D., is professor of medicine at Stanford University Medical School and a member of the American Physiological Society. His special research interests have been concerned with an experimental study of problems in the field of protein metabolism.

Kathryn Tissue, A.B., Marshall College, M.S., University of Chicago, has taught home economics at Mississippi State College for Women, Kent State Teachers and Marshall College, and Oklahoma, Oklahoma Baptist and Ottawa Universities. She has been research assistant, Division of Biochemistry, University of Minnesota, and is at present assistant professor of home economics, teaching nutrition and dietetics, including diet in disease, at the University of Kansas, Lawrence.

Margaret L. Fincke, A.B., Mt. Holyoke, M.A. and Ph.D., Columbia University, was formerly assistant in chemistry at Columbia University, and since 1935 has been associate professor of foods and nutrition at Oregon State College. Her main research interests to date have been with calcium and phosphorus, and vitamins B_1 and C.

James G. Stone, executive secretary, Los Angeles Tuberculosis and Health Association, has been engaged in the public health field of education, with special emphasis on tuberculosis and cancer, for the past fifteen years, during which his work has carried him through this country and Hawaii. Mr. Stone is a member of the American Association of Social Workers and a fellow of the Public Health Section of the American Public Health Association. He is chairman of the Health Division, and also of the Health Education Section of the Council of Social Agencies of Los Angeles.

Martha S. Pittman is head of the Department of Food Economics and Nutrition, Kansas State College, and has been chairman of the committee of which she writes for five of the six years during which it has been in existence.